

INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 11, 2005

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<p>1 IN THE DISTRICT COURT OF ROGERS COUNTY 2 STATE OF OKLAHOMA 3 4 5 ----- x 6 DOUG INGRAM, et al., ) 7 ) 8 Plaintiffs, ) 9 vs. ) NO: CJ-2001-438 10 ) 11 SOLKATRONIC CHEMICAL, INC., ) 12 JARRAD GARRISON, JEFF K. HARRIS, ) 13 and JANE DOE, and ) 14 AIR PRODUCTS AND CHEMICALS, INC., ) 15 and ) 16 CITY OF TULSA-ROGERS COUNTY ) 17 PORT AUTHORITY, ) 18 ) 19 Defendants. ) 20 ----- x 21 22 VOLUME I 23 The Deposition of SHAYNE C. GAD, Ph.D., 24 taken by Counsel for the Defendants 25 Cary, North Carolina July 11, 2005 Reported by: Stephanie Fischer Court Reporter Notary Public State of North Carolina</p>	<p>1 The deposition of SHAYNE C. GAD, Ph.D., was taken 2 pursuant to notice of counsel for the Defendants on the 11th 3 day of July, 2005, commencing at 9:57 a.m. at the Residence 4 Inn, 2900 Regency Parkway, Cary, North Carolina, before 5 Stephanie Fischer, a Court Reporter and Notary Public for the 6 State of North Carolina. 7 8 INDEX 9 PAGE 10 Examination by Mr. Tucker ..... 4 11 12 13 EXHIBITS 14 15 DEFENDANTS' EXHIBITS MARKED FOR IDENTIFICATION: 16 NO. DESCRIPTION PAGE 17 1 Handwritten notes regarding expert witness assignment ..... 19 18 19 2 Handwritten notes and e-mail correspondence regarding expert witness assignment ..... 20 20 3 Map of Clients with Hematuria ..... 44 21 4 Affidavit of Bruce Stewart ..... 55 22 5 Roundtable of Toxicology Consultants ..... 95 23 24 ***** 25</p>
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<p>1 APPEARANCES OF COUNSEL: 2 3 For the Plaintiffs: 4 KEITH A. WARD, Esquire 5 Richardson, Sloop, Richardson &amp; Ward 6 The Richardson Building 7 6555 South Lewis 8 Tulsa, Oklahoma 74136 9 918.492.7674 10 918.493.1295 fax 11 12 For the Defendants: 13 JOHN H. TUCKER, Esquire 14 CANDACE J. SMITH, Products Liability Manager 15 Rhodes, Hieronymus, Jones, Tucker &amp; Gable, PLLC 16 ONEOK Plaza 17 Suite 400 18 100 West 5th Street 19 Tulsa, Oklahoma 74103-4287 20 918.582.1173 21 918.592.3390 fax 22 THOMAS L. KENYON, Esquire 23 Air Products and Chemicals, Inc. 24 7201 Hamilton Boulevard 25 Allentown, Pennsylvania 18195-1501 610.481.8544 610.706.5363 fax</p>	<p>1 ***** 2 PROCEEDINGS 3 Whereupon, SHAYNE C. GAD, Ph.D., a witness, having 4 been duly sworn to tell the truth, the whole truth and 5 nothing but the truth, was examined and testified as follows: 6 ***** 7 EXAMINATION ON BEHALF OF THE DEFENDANTS 8 BY MR. TUCKER: 09:52:17 9 Q. Would you state your name for the record, please? 09:54:43 10 A. Shayne Cox Gad. 09:57:31 11 Q. May name is John Tucker, sir, and I'm going to be 09:57:33 12 asking you questions in a deposition. Have you given a 09:57:38 13 deposition before? 09:57:41 14 A. Yes, sir, I have. 09:57:42 15 Q. How many times? 09:57:43 16 A. Oh, I would have to look at the list. I think I've 09:57:44 17 given you a list of the last four or five years of 09:57:50 18 depositions; but probably on the order of maybe 20 times, 25, 09:57:54 19 somewhere in there, deposition and testimony, and/or 09:57:59 20 testimony. 09:58:04 21 Q. I would assume then that you're familiar with what a 09:58:05 22 deposition is and the importance of your understanding the 09:58:10 23 question that I ask before you try to answer it? 09:58:13 24 A. Yes, sir. 09:58:15 25 Q. Have you also had a chance to visit with your 09:58:15</p>

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**EXHIBIT**

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<p style="text-align: right;">Page 5</p> <p>1 attorney this morning, Mr. Ward, to determine whether you have 09:58:19  2 any questions about this particular deposition? 09:58:21  3 A. No, sir. Some may come up. 09:58:23  4 Q. I probably didn't ask that very well. Have you had 09:58:26  5 a chance to visit with Mr. Ward this morning? 09:58:30  6 A. Yes, sir, briefly. 09:58:33  7 Q. Mr. Ward is the lawyer who retained you in this 09:58:35  8 case? 09:58:39  9 A. Mr. Ward's firm. Mr. Stoops was the person I dealt 09:58:39  10 with. 09:58:45  11 Q. I'm curious, the first report that you submitted -- 09:58:45  12 you submitted two reports, didn't you? You have them in front 09:58:51  13 of you, don't you? 09:58:55  14 A. Yes, sir. 09:58:55  15 Q. Would you look at your first report. Is there a 09:58:55  16 reason you didn't sign that report? 09:58:59  17 A. Oh, I printed this off electronically from my 09:59:01  18 records. I did send in a signed copy. 09:59:05  19 Q. Well, you signed your second report but you didn't 09:59:10  20 sign your first one, at least I didn't get one. 09:59:13  21 A. No. I did signed copies of both, I believe. 09:59:16  22 Q. Tell me what the letters behind your name stand for, 09:59:21  23 the DABT. 09:59:25  24 A. DABT is Diplomate of the American Board of 09:59:27  25 Toxicology. It's a certification program, a 09:59:31</p>	<p style="text-align: right;">Page 7</p> <p>1 entire exam. And then you must recertify every five years 10:00:56  2 thereafter. 10:01:04  3 Q. Is that with a new examination? 10:01:04  4 A. The first two times are by examination. Subsequent 10:01:07  5 times -- and in each case, you also have to present records 10:01:13  6 showing continuing education, involvement in the field, 10:01:17  7 et cetera. But the time subsequent to your third 10:01:22  8 certification, you present those records and data. And you 10:01:28  9 have to additionally present -- prepare and present suitable 10:01:38  10 questions for inclusion in subsequent exams. 10:01:45  11 Q. Now, as I understand, you're not really familiar 10:01:49  12 with the difference between the concept of board certification 10:01:52  13 in general toxicology and a board certification in medical 10:01:56  14 toxicology except that you believe that relates to physicians; 10:02:00  15 is that correct? 10:02:04  16 A. My personal experience there is, in fact, the 10:02:05  17 obvious general toxicology. 10:02:09  18 Q. What is your home address, sir? 10:02:11  19 A. 102 Woodtrail Lane -- Woodtrail is one word -- Cary, 10:02:13  20 C-A-R-Y, North Carolina. 10:02:20  21 Q. What is your office address? 10:02:21  22 A. It is the same address, sir. 10:02:23  23 Q. You indicated before we started that you have one 10:02:25  24 full-time employee; is that right? 10:02:29  25 A. Yes, sir. 10:02:30</p>
<p style="text-align: right;">Page 6</p> <p>1 board-certification program for toxicologists. 09:59:34  2 Q. Now, is that medical toxicology? Is that a 09:59:38  3 certified medical toxicologist? 09:59:41  4 A. It is toxicology, broad general toxicology. 09:59:41  5 Q. Is there such a thing as a board-certified medical 09:59:46  6 toxicologist? 09:59:51  7 A. There is, I believe, a board that does medical 09:59:52  8 toxicology separately, yes, sir. 09:59:56  9 Q. Would you be eligible for that or do you have to be 09:59:58  10 a physician to apply for that? 10:00:02  11 A. I've never examined it, but I assume it's probably 10:00:04  12 limited to those with physicians' degrees. 10:00:08  13 Q. What's an ATS? 10:00:11  14 A. ATS is Academy of Toxicologic Science. I'm a fellow 10:00:12  15 of the Academy of Toxicologic Sciences. Whoever picked the 10:00:19  16 acronym, I can't see using Fellow Academy Toxicologist 10:00:23  17 Science, FATS, on my CV. Whoever picked that was not paying 10:00:30  18 much attention. Those two, between them, are the board 10:00:33  19 certification for general toxicology in this country and 10:00:38  20 worldwide. 10:00:40  21 Q. Are either of those certifications by examination? 10:00:40  22 A. Yes, sir. 10:00:43  23 Q. Which one? 10:00:44  24 A. DABT is by examination. You have a two-day exam, 10:00:45  25 which you take and pass, or don't. You have to pass the 10:00:50</p>	<p style="text-align: right;">Page 8</p> <p>1 Q. What is that person's title? 10:02:31  2 A. I think right now we're calling him principal 10:02:34  3 assistant and data management supervisor. 10:02:39  4 Q. What does that mean? 10:02:42  5 A. Most of my practice is technical and regulatory. 10:02:43  6 Litigation is a small part of my practice, and we do a lot of 10:02:50  7 clinical trials. We will run clinical trials and do clinical 10:02:59  8 management for small pharmaceutical companies. So his 10:03:06  9 principal responsibility is setting up databases as I direct 10:03:10  10 him on the statistical analysis on the data and presentation 10:03:16  11 for data for reports. 10:03:21  12 Q. When you say "clinical trials," that's in 10:03:22  13 anticipation of hopefully presenting a drug to the FDA for 10:03:25  14 approval for release for sale to the public? 10:03:29  15 A. Yes, sir. Continued clinical development, yes, sir. 10:03:32  16 Q. For the Food and Drug Administration? 10:03:33  17 A. Yes, sir. Or perhaps an overseas agency that's 10:03:35  18 equivalent. 10:03:39  19 Q. Has anyone except you worked on this case? 10:03:40  20 A. No, sir. Well, not in terms of this, no. My staff 10:03:45  21 hasn't been involved other than typing and stuff. 10:03:50  22 Q. Have you, yourself, ever been a plaintiff or 10:03:54  23 defendant in a lawsuit? 10:04:04  24 A. No, sir. 10:04:07  25 Q. Have you, yourself, ever been charged with any 10:04:07</p>

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1 crime? 10:04:09  
 2 A. No, sir, I have not. 10:04:09  
 3 Q. And you're married? 10:04:09  
 4 A. Yes, sir. 10:04:12  
 5 Q. What is your wife's name? 10:04:12  
 6 A. Joyce. 10:04:14  
 7 Q. Do you have children? 10:04:15  
 8 A. I do. 10:04:16  
 9 Q. Are they adult children or -- 10:04:16  
 10 A. Well, that's arguable, I'm afraid. I have three 10:04:19  
 11 children. I have an oldest daughter, Samantha, who is a 10:04:25  
 12 chemical engineer, works in Missouri. 10:04:29  
 13 I have a middle daughter, Catina, who has a business 10:04:32  
 14 degree, and is now finishing a second degree in fashion design 10:04:37  
 15 out in California. 10:04:42  
 16 And then I have a son, Jake, who is in his second 10:04:43  
 17 year of college. 10:04:47  
 18 Q. Have you worked for the Richardson law firm before? 10:04:48  
 19 A. No, sir, I don't believe so. 10:04:56  
 20 Q. Do you have any other cases with them at this point 10:04:58  
 21 in time? 10:05:01  
 22 A. No, sir. 10:05:01  
 23 Q. Do you know how they got your name? 10:05:02  
 24 A. I could look at my notes. I track -- I ask people 10:05:04  
 25 when they come to me, whoever they are. 10:05:11

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1 Q. Anytime you need to refer to your file when I ask a 10:05:13  
 2 question, I would like you to please feel free to do so. 10:05:17  
 3 A. I will try to do so. It's not really a file. It's 10:05:20  
 4 my book of business. If people call me, I ask them, "How did 10:05:22  
 5 you get my name?" So if you'll excuse me for a minute, I will 10:05:27  
 6 see if I can find that answer for you, sir. 10:06:10  
 7 Yes, sir. I was recommended to them by John Layman. 10:06:40  
 8 John is a toxicology consultant up in Pennsylvania, I believe; 10:06:48  
 9 and someone from Mr. Stoops' firm had contacted Dr. Layman, 10:06:58  
 10 Dr. Layman suggested that they contact me. 10:07:06  
 11 Q. And you say Mr. Stoops contacted you? 10:07:09  
 12 A. Actually, I was originally contacted by Marjorie 10:07:15  
 13 Gadd, G-A-D-D. That's, I believe, her -- I'm not sure which 10:07:18  
 14 is her married name and which is the other, but one of the 10:07:23  
 15 legal assistants with Mr. Stoops' firm. 10:07:25  
 16 Q. Do you advertise your services as an expert witness? 10:07:28  
 17 A. I list that as one thing I do on my website. I 10:07:33  
 18 believe that website is cross-listed. 10:07:38  
 19 Q. What do you mean cross-listed? 10:07:41  
 20 A. It's linked to other websites. 10:07:44  
 21 Q. What other websites is it linked to? 10:07:46  
 22 A. Expert pages. I think the Roundtable also arranged 10:07:49  
 23 for it to be linked to lawinfo.com. I'm not sure what others 10:08:00  
 24 there might be. 10:08:06  
 25 Q. Are any of those sites that you subscribe to in 10:08:07

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1 order to get that linking? 10:08:11  
 2 A. Expert Pages, I do. 10:08:13  
 3 Q. What is Expert Pages? 10:08:15  
 4 A. A poor investment. It is -- I guess about five 10:08:20  
 5 years ago, they maintain a website for experts into various 10:08:28  
 6 fields. I say it's a poor investment because it doesn't -- I 10:08:33  
 7 meant to drop it this year. It doesn't really give much in 10:08:39  
 8 the way of return. It's not where my business primarily is. 10:08:43  
 9 Q. Is it a list of experts who offer themselves to 10:08:48  
 10 testify? 10:08:51  
 11 A. Broader than that. It's technical experts for -- 10:08:51  
 12 could be litigation support, could be help with your product 10:08:58  
 13 development. It could be a broad range of things, so it's not 10:09:07  
 14 limited to litigation. 10:09:10  
 15 Q. What is Lawinfo? 10:09:12  
 16 A. I think Lawinfo is an expert-witness type service. 10:09:14  
 17 I belong to the Roundtable of Toxicology Consultants and the 10:09:24  
 18 roundtable did the crosslink to Lawinfo, so I invested in 10:09:29  
 19 that. I wasn't party to the decision. 10:09:34  
 20 Q. Do they subscribe to Lawinfo, the Roundtable, that 10:09:36  
 21 is? 10:09:41  
 22 A. Well, they pay for the link. 10:09:41  
 23 Q. And then your website, does it indicate that you're 10:09:44  
 24 available to testify? 10:09:53  
 25 A. It says that one of the things I do is litigation 10:09:55

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1 support, yes, sir. 10:09:58  
 2 Q. How long have you had your website up? 10:09:59  
 3 A. About five years now. 10:10:01  
 4 Q. Are you linked? That is to say, does your website 10:10:03  
 5 contain links to anywhere else? 10:10:10  
 6 A. I have my principal assistant handle most of this 10:10:12  
 7 nowadays, so -- it is linked -- obviously, there is a link 10:10:18  
 8 from the RTC, the Roundtable of Toxicologists website and to 10:10:24  
 9 my website; it's linked both ways. I don't think -- well, 10:10:29  
 10 that may not be accurate. I have a couple of people, 10:10:40  
 11 associates, that we share work back and forth and may be 10:10:43  
 12 linked to them, but I don't think so. 10:10:47  
 13 Q. Who are the associates that you share work back and 10:10:49  
 14 forth with? 10:11:00  
 15 A. Dr. Brock, B-R-O-C-K. 10:11:00  
 16 Q. Where is Dr. Brock? 10:11:06  
 17 A. Dr. Brock is in one of the suburbs in Washington, 10:11:08  
 18 D.C., in Maryland. And Dr. Robert Kapp, K-A-P-P, who is also 10:11:13  
 19 in the D.C. area. 10:11:20  
 20 Q. Why do you share work with them? 10:11:20  
 21 A. Well, it's complex. Each of us has a different 10:11:22  
 22 thing. In my case, I have more work generally than I can do. 10:11:35  
 23 More people come to me, and I don't care to -- many of the 10:11:40  
 24 things, for example, litigation support is just something that 10:11:44  
 25 I have tried and frequently send on to them. So in my case -- 10:11:48

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1 Sometimes, like when I was over in Madagascar, I may 10:11:56  
 2 need things done for me, drafts or stuff pulled together while 10:12:01  
 3 I'm overseas. So it's a way for me to handle overload and 10:12:05  
 4 still basically take care of people who come to me, but if I 10:12:09  
 5 can't help them, I send them to someone dependable. 10:12:14  
 6 Dr. Brock is a toxicologist of some 20 years and has 10:12:18  
 7 just gone into independent consultant about a year ago. He's 10:12:21  
 8 trying to build a practice, so he would like work. And his 10:12:26  
 9 area is more chemical toxicology. 10:12:30  
 10 Dr. Kapp is a different issue. Dr. Kapp has been at 10:12:33  
 11 this for as long as I have, but has a practice which is not 10:12:42  
 12 very diversified. He has one what we call gorilla client who 10:12:47  
 13 is like 80 percent of his business. 10:12:53  
 14 Q. Is he a drug and device guy? 10:12:57  
 15 A. No. Bob is actually consumer products and foods, 10:12:59  
 16 and that's it. That tends to be a somewhat different area. 10:13:02  
 17 Q. What is chemical toxicology? 10:13:03  
 18 A. Chemical industry more. Most of my practice 10:13:05  
 19 nowadays is pharmaceuticals; medical devices; some occupation, 10:13:13  
 20 what we would call chemical toxicology, largely with people 10:13:23  
 21 that I once knew when I worked for Union Carbide many years 10:13:29  
 22 ago. 10:13:33  
 23 Q. Since Dr. Brock's specialty is chemical toxicology, 10:13:33  
 24 why didn't you refer this matter to him? 10:13:33  
 25 A. I'm sorry? 10:13:33

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1 Q. Since Dr. Brock's specialty is chemical toxicology, 10:13:36  
 2 which is what this is, why didn't you refer this matter to 10:13:41  
 3 him? 10:13:43  
 4 A. It predates. 10:13:43  
 5 Q. Predates Dr. Brock? 10:13:44  
 6 A. Remember, he's only been an independent for less 10:13:47  
 7 than a year. 10:13:50  
 8 Q. When were you contacted in this case? 10:13:51  
 9 A. December of 2003, I believe my notes indicate. 10:13:52  
 10 Q. Have you consulted at all with Dr. Brock about this 10:13:58  
 11 case? 10:14:02  
 12 A. I think I probably, without reference to, have 10:14:02  
 13 talked to him about his experience or anything he might know 10:14:11  
 14 about arsine. 10:14:15  
 15 Q. What did you learn from those conversations? 10:14:17  
 16 A. I'm sorry? 10:14:17  
 17 Q. Again, that's a good example. When you can't hear 10:14:18  
 18 me, you tell me. 10:14:20  
 19 A. My hearing is not -- I lost a lot of hearing at one 10:14:23  
 20 time. 10:14:23  
 21 Q. Well, you can't hear and I can't talk. We're a hell 10:14:26  
 22 of a pair, aren't we? 10:14:29  
 23 A. Boy, we're doing great. 10:14:33  
 24 Q. What did you get out of those conversations with 10:14:35  
 25 Dr. Brock about arsine? 10:14:38

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1 A. Not a great deal, I'm afraid. 10:14:41  
 2 Q. Do you recall the conversations at all? 10:14:43  
 3 A. I asked him if he had any background in the area or 10:14:46  
 4 any experience or anything, and I don't remember getting a 10:14:52  
 5 positive on that. 10:14:55  
 6 Q. What was your assignment from the Richardson law 10:14:57  
 7 firm? 10:15:04  
 8 A. Well, when they initially contacted me, I told -- 10:15:05  
 9 and I believe initially I was dealing with Ms. Gadd. I know 10:15:12  
 10 it's confusing. I think Steinberg is the name she uses now. 10:15:21  
 11 MR. WARD: Yeah. 10:15:28  
 12 BY MR. TUCKER: 10:15:29  
 13 Q. So there is no confusion, why don't you just call 10:15:29  
 14 her Marjorie? 10:15:33  
 15 A. Okay, Marjorie. 10:15:34  
 16 MR. WARD: No. You're talking about two different 10:15:34  
 17 people; Marjorie Gadd and Marla Steinberg. 10:15:37  
 18 A. Yeah. But initially they said, "We have an exposure 10:15:42  
 19 case to arsine gas." 10:15:47  
 20 And I relayed that, "Yes, here's my CV; yes, this is 10:15:50  
 21 something I have some knowledge and experience in. I believe 10:15:55  
 22 technically I can help you, but I don't know if I can help you 10:15:58  
 23 in terms of your case. I will have to review some of the 10:16:02  
 24 information before I can tell you whether I think I can help 10:16:06  
 25 you or not." 10:16:10

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1 So that was the initial assignment, to review the 10:16:11  
 2 information and say, "Yes, I think my opinion might be of help 10:16:14  
 3 to you" or "No, I'm sorry." I can't do it any other way. 10:16:18  
 4 BY MR. TUCKER: 10:16:23  
 5 Q. What information did you review to reach that point? 10:16:23  
 6 A. Well, they supplied me -- excuse me, I'm still 10:16:28  
 7 adjusting from the diet overseas -- with information in terms 10:16:43  
 8 of this was the exposure, some basic information of what had 10:16:48  
 9 happened. I then -- some of the signs and symptoms. And then 10:16:54  
 10 I went and researched the situation. 10:17:00  
 11 Q. You said, "This was the exposure." Can you tell me 10:17:03  
 12 what they said? What exposure was it? 10:17:06  
 13 A. I believe or I recollect that the original was that 10:17:08  
 14 there had been a tank burst, an explosion, and a release of 10:17:11  
 15 gas in an industrial area in the city, and that a number of 10:17:18  
 16 people, somewhat shy or slightly shy of 200 people, may have 10:17:31  
 17 been exposed; a range of signs and symptoms and effects were 10:17:37  
 18 claimed. That's basically the exposure background. 10:17:43  
 19 Q. Do you have notes of your conversations that you had 10:17:48  
 20 with people? 10:17:51  
 21 A. Sometimes I do, sometimes I don't. I don't think in 10:17:52  
 22 this case I did. 10:17:59  
 23 Q. Did you bring your entire file with you? 10:18:00  
 24 A. Yes, sir, that is the entire file. Except, let me 10:18:02  
 25 go back and see if I put any notes on this. 10:18:07

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1 Q. That's your Filofax there? 10:18:12  
 2 A. I'm afraid I'm not electronic. No, not a lot of 10:18:15  
 3 help here. The 18th of December, 2003, my actual note says 10:18:36  
 4 the attorney is Fred Stoops. "There was an arsine release in 10:18:42  
 5 Oklahoma City." That's all of the information that's here. 10:18:47  
 6 And then I -- of course, this is a contact. And 10:18:55  
 7 then if they actually -- if I actually become involved, I add 10:19:01  
 8 a symbol that it's become a job. If not, I cross it out. 10:19:06  
 9 Q. Were you given any materials at that time before you 10:19:13  
 10 answered the question to see if you could be of help? 10:19:15  
 11 A. If it was, it's in the file, sir. 10:19:18  
 12 Q. I'm really curious about the initial materials that 10:19:24  
 13 you got involved with before you reached that decision that 10:19:27  
 14 you could be of help. Would you mind checking your file to 10:19:30  
 15 see if you can determine that for me? 10:19:33  
 16 A. Yes, sir. It's likely, in these matters, that I try 10:19:36  
 17 to do my own independent research. 10:19:51  
 18 Q. Would you like a separate table so you can spread 10:19:53  
 19 those things out? 10:19:57  
 20 A. That might actually be a pretty good idea. 10:19:59  
 21 (Off the record from 10:19 a.m. to 10:29 a.m.) 10:19:59  
 22 A. I think I have drawn together those things that 10:20:28  
 23 constituted what I first considered. And in looking at it, I 10:20:30  
 24 also know there was an error, that I had asked at one point 10:20:37  
 25 shortly after I went into practice for Dr. Brock to 10:20:41

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1 A. It says "injuryboard.com." But we do as -- 10:31:05  
 2 Q. Read that top line, would you? 10:31:12  
 3 A. "Arsine lawsuit overview. Find trial lawyers and 10:31:14  
 4 attorneys with experience in arsine." 10:31:21  
 5 Q. That's some kind of a lawyer deal, isn't it? 10:31:23  
 6 A. Yes, sir, I would imagine it is. But for our 10:31:26  
 7 purposes, it's something we found on the Web. We try to find 10:31:31  
 8 anything we can. One of the things I don't like to do -- 10:31:35  
 9 forgive me -- I can't depend on the attorneys to provide 10:31:40  
 10 stuff. 10:31:44  
 11 Q. No. They might leave the room at any given moment? 10:31:45  
 12 A. There is that also. 10:31:49  
 13 Q. I'm trying to figure out now what all you had. You 10:31:50  
 14 have a bunch of notes there. What's on that note? May I see 10:31:54  
 15 that real quick? 10:31:58  
 16 A. Yes, sir. 10:32:00  
 17 (Gad Deposition Exhibit Number 1 was marked for 10:32:31  
 18 identification.) 10:32:31  
 19 BY MR. TUCKER: 10:32:32  
 20 Q. I'm going to mark this Defendant's Exhibit Number 1. 10:32:32  
 21 This is a piece of paper that says the Washington Duke Inn and 10:32:36  
 22 country club with a little crest on there? 10:32:41  
 23 A. Yes, sir, that's the stationery. 10:32:44  
 24 Q. Is that where you were when you got the call? 10:32:45  
 25 A. No, sir. I hang on to notepads from the places that 10:32:48

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1 independently do a search for what he found on arsine gas, to 10:29:50  
 2 check online. 10:29:54  
 3 BY MR. TUCKER: 10:29:55  
 4 Q. An independent search. That would be like a 10:29:55  
 5 literature search? 10:29:57  
 6 A. Yes, sir. 10:30:00  
 7 MR. TUCKER: Would you go back and read that 10:30:00  
 8 question that we did the intermission on? 10:30:00  
 9 THE COURT REPORTER: "Were you given any materials 10:19:15  
 10 at that time before you answered the question to see 10:19:15  
 11 if you could be of help?" 10:19:18  
 12 A. Yes, sir. 10:30:21  
 13 BY MR. TUCKER: 10:19:15  
 14 Q. What? 10:30:23  
 15 A. I believe the pile of information that's in front of 10:30:23  
 16 me constitutes that. I can't tell you necessarily which of 10:30:27  
 17 these I may have been given and which I have done on my own 10:30:40  
 18 search because I always do my own search. 10:30:45  
 19 Q. What is injuryboard.com? 10:30:49  
 20 A. That's something I pulled off the Web. 10:30:52  
 21 Q. That's a lawyer's service? I'm looking at the top 10:30:54  
 22 line there. 10:31:00  
 23 A. Yes, sir, I see that. But I don't know if it's a 10:31:00  
 24 lawyer service or not. 10:31:03  
 25 Q. What does it say? 10:31:04

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1 I go, and it was just one of those that I was using. 10:32:55  
 2 Q. Is it dated at all? 10:32:55  
 3 A. No, sir, I don't see a date on it. 10:32:57  
 4 Q. Can you tell me when it was? 10:33:01  
 5 A. It would have been somewhere between December of '03 10:33:03  
 6 and February, March of '04. 10:33:07  
 7 (Gad Deposition Exhibit Number 2 was marked for 10:33:16  
 8 identification.) 10:33:16  
 9 BY MR. TUCKER: 10:33:16  
 10 Q. Could you just kind of ignore that for now. Look at 10:33:16  
 11 Exhibit 1 and start at the top there and tell me what that 10:33:20  
 12 says? 10:33:24  
 13 A. "ER hemolysis." 10:33:24  
 14 Q. Let me stop you right there. Why was it important 10:33:26  
 15 for you to write down "ER hemolysis"? 10:33:30  
 16 A. These were notes I got from speaking to, I believe, 10:33:34  
 17 Marjorie Gadd or to Mr. Stoops. Probably Marjorie Gadd at 10:33:42  
 18 this point. 10:33:49  
 19 Q. At the time you wrote that down, do you know why you 10:33:49  
 20 selected ER hemolysis as a note that was important for you to 10:33:53  
 21 write down? 10:33:57  
 22 A. Yes, sir. This is a note of things that -- it is, 10:33:58  
 23 in fact, probably primarily the things we talked about, that 10:34:05  
 24 there were some emergency room visits. I asked -- or from 10:34:13  
 25 that I asked "These are the things we're going to need. Was 10:34:18

5 (Pages 17 to 20)



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<p style="text-align: right;">Page 21</p> <p>1 there hemolysis in those individuals?" 10:34:22</p> <p>2 I needed to have medical records, I needed, at some 10:34:26</p> <p>3 point I felt, to visit the site. I needed a copy of any 10:34:33</p> <p>4 complaint. I needed to know were there any blood levels, was 10:34:41</p> <p>5 there any electromyographies that had been done on the 10:34:46</p> <p>6 individuals. Did we have – these were things I felt I would 10:34:52</p> <p>7 need to be able to evaluate. 10:34:57</p> <p>8 Was there documentation of their presence at the 10:35:02</p> <p>9 site, that this was – and then notes as to background? This 10:35:07</p> <p>10 was a 2001 exposure. It was approximately a 50-pound cylinder 10:35:12</p> <p>11 of products released in a rupture. Was there a question if 10:35:19</p> <p>12 they were warned? What was the temperature at the time? I 10:35:25</p> <p>13 believe I was told it was a fairly warm day. 10:35:30</p> <p>14 Q. Have you ever been to Oklahoma in the middle of 10:35:35</p> <p>15 July? 10:35:39</p> <p>16 A. Born and raised in El Paso. Been to Oklahoma many 10:35:39</p> <p>17 times. 10:35:43</p> <p>18 Q. So what does "fairly warm" mean to you in the middle 10:35:43</p> <p>19 of July in Oklahoma? 10:35:46</p> <p>20 A. Oh, about 100 degrees. You get a little bit more 10:35:47</p> <p>21 moisture than we do in El Paso. 10:35:51</p> <p>22 What court was it going to be in? Was it going to 10:35:57</p> <p>23 be in state? No, it was going to be in federal court, and it 10:36:02</p> <p>24 would go to trial in 9 to 12 months. That hasn't happened. 10:36:08</p> <p>25 That there were 192 clients. I asked, "Was there any kind of 10:36:13</p>	<p style="text-align: right;">Page 23</p> <p>1 A. There were two principal damage mechanisms, if you 10:38:16</p> <p>2 will. The primary of those principles is disruption of the 10:38:21</p> <p>3 membrane of red blood cells leading to hemolysis, rupture of 10:38:25</p> <p>4 the red blood cells, spilling hemoglobin onto – so – 10:38:32</p> <p>5 Q. What is the secondary? 10:38:36</p> <p>6 A. There is also some disruption of antioxygen catalase 10:38:37</p> <p>7 activity in the body. 10:38:44</p> <p>8 Q. And how is that tested? 10:38:46</p> <p>9 A. Well, there is some fairly elegant methods for 10:38:49</p> <p>10 looking at them, but you usually don't see those things done 10:38:57</p> <p>11 in emergency room procedures. 10:39:02</p> <p>12 Q. And when you say hemolysis, what level of hemolysis 10:39:05</p> <p>13 tells you that there has been exposure to arsine? 10:39:08</p> <p>14 A. It varies from person to person. You would have 10:39:10</p> <p>15 to look at – what you really want in a perfect situation 10:39:13</p> <p>16 would be some baseline data, what is this person's background 10:39:18</p> <p>17 level because there is some individual variation. And then 10:39:22</p> <p>18 did you see an increase in the amount of free hemoglobin, 10:39:27</p> <p>19 et cetera, an indication that there was hemolysis there. 10:39:33</p> <p>20 Q. Well, you had a number of people to look at I 10:39:36</p> <p>21 suppose, didn't you, from all of the medical records that you 10:39:40</p> <p>22 examined? 10:39:42</p> <p>23 A. I did eventually get medical records, yes, sir. 10:39:42</p> <p>24 Q. And in those records, did you find hemolysis? 10:39:46</p> <p>25 A. I don't recollect exactly, but there were a couple 10:39:48</p>
<p style="text-align: right;">Page 22</p> <p>1 release history for the site?" 10:36:17</p> <p>2 I offered the opinion that they needed to work on 10:36:21</p> <p>3 defining the zone of vulnerability; that is, the dispersion. 10:36:24</p> <p>4 And then my notes – I have a double set of lines and then 10:36:30</p> <p>5 notes below that where other things I said needed to happen. 10:36:34</p> <p>6 I needed – I would need to see the plant. 10:36:38</p> <p>7 I wondered if the other side, you ladies and 10:36:51</p> <p>8 gentlemen, had retained an expert. I needed to see medical 10:37:03</p> <p>9 records, exposure and release data. What were the claims of 10:37:06</p> <p>10 effect. I needed to see product material safety data sheets, 10:37:10</p> <p>11 MSDS. I would need to pull up the literature. Yes, I would 10:37:15</p> <p>12 like to see what they had in terms of literature, but I would 10:37:20</p> <p>13 have to do my own review. Was there a violation history for 10:37:23</p> <p>14 releases? And I have a note circled and highlighted down here 10:37:28</p> <p>15 that says "ID epidemiologist," and they had asked that I 10:37:33</p> <p>16 identify an epidemiologist for them. 10:37:38</p> <p>17 Q. Did you? 10:37:41</p> <p>18 A. I think I did, but I don't remember who it was. 10:37:41</p> <p>19 Q. Okay. Why did you say you had to ask the question 10:37:43</p> <p>20 was there hemolysis? 10:37:50</p> <p>21 A. Off the top of my head, what were the kinds of 10:37:53</p> <p>22 things I would look for for an acute arsine gas exposure that 10:37:58</p> <p>23 would give me an indication that there was a lot of acute 10:38:04</p> <p>24 damage. You typically – 10:38:09</p> <p>25 Q. Why would you look for hemolysis? 10:38:12</p>	<p style="text-align: right;">Page 24</p> <p>1 of people that – there was an indication that they had gone 10:39:51</p> <p>2 and they had measured that, and there was an indication that 10:39:55</p> <p>3 there was some, yes, sir. But the majority of them, my 10:39:59</p> <p>4 recollection is – the majority of them, no, sir. 10:40:02</p> <p>5 Q. Well, when you say that "they had some" – I think 10:40:03</p> <p>6 I'm quoting you there – as I understand the process is if you 10:40:06</p> <p>7 have one red blood cell rupture, theoretically, that's 10:40:11</p> <p>8 hemolysis? 10:40:16</p> <p>9 A. Yes, sir. 10:40:16</p> <p>10 Q. My question is: How much of an elevation in 10:40:17</p> <p>11 laboratory value, when you look for hemolysis, tells you that 10:40:24</p> <p>12 person was exposed to arsine? 10:40:29</p> <p>13 A. And yes, sir. And I tried to answer that. I'm 10:40:35</p> <p>14 sorry. There are individual variability. 10:40:40</p> <p>15 Q. What's the bottom line, the low limit? 10:40:42</p> <p>16 A. The lower limit. I don't know that anyone would 10:40:45</p> <p>17 opine a lower limit for all individuals because of the 10:40:53</p> <p>18 variation. Typically, if I was looking at an individual and I 10:40:59</p> <p>19 had some idea of background, I would look for half a percent, 10:41:05</p> <p>20 something more than that, above – outside his normal 10:41:13</p> <p>21 variation range. 10:41:17</p> <p>22 Q. What does half a percent translate to in milligrams 10:41:18</p> <p>23 per deciliter? 10:41:22</p> <p>24 A. Again, that would vary, so this is where the 10:41:25</p> <p>25 individual variability comes in. There is some variation from 10:41:29</p>

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1 individual to individual, what baseline is, so you'd have to 10:41:35  
 2 look at that. 10:41:37  
 3 Q. I think we're not communicating. How would you 10:41:37  
 4 expect to look at a laboratory report on an individual that 10:41:41  
 5 had a blood study and say "This person has some evidence of a 10:41:45  
 6 possible hemolysis"? What would you look at? What test would 10:41:50  
 7 you look at? 10:41:56  
 8 A. I would -- depends on how severe. I would look at 10:41:56  
 9 red blood count; I would look for free hemoglobin; I would 10:42:06  
 10 look for hemoglobin concentration. Hemoglobin concentration 10:42:11  
 11 is the milligrams for -- per concentration. More severe 10:42:20  
 12 cases, longer-term cases, I would look for things -- and, of 10:42:28  
 13 course, in this case, I would look for things like 10:42:33  
 14 reticulocyte counts, things like that. 10:42:37  
 15 Q. So is it your testimony, then, that as a 10:42:40  
 16 toxicologist, you cannot tell me a level at which you can look 10:42:42  
 17 at laboratory values that would demonstrate, for example, 10:42:46  
 18 concentrations or plasma free hemoglobin or haptoglobin levels 10:42:50  
 19 and say "This person I can tell you had an opportunity to be 10:43:03  
 20 exposed to arsine and probably was exposed to arsine"? 10:43:03  
 21 A. No, sir. What I'm saying is there is individual 10:43:04  
 22 variability. If you ask me exactly a level for a individual, 10:43:07  
 23 on one side of that, they absolutely were not, and on the 10:43:12  
 24 other side of that bright line, they absolutely were, no 10:43:17  
 25 toxicologist could draw such a line. 10:43:22

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1 measure it. It's a complex equation. You have how much 10:51:04  
 2 exposure over what period of time and when you actually take 10:51:09  
 3 the sample. 10:51:12  
 4 Q. We're just talking about the sample. Someone else 10:51:14  
 5 can worry about when we took it. We're just talking about the 10:51:17  
 6 sample. 10:51:21  
 7 A. But you can't evaluate that sample without knowing 10:51:21  
 8 those other things. In other words, if -- this gets fairly 10:51:25  
 9 complex. If you had someone exposed and at such and such a 10:51:36  
 10 level and you took a sample today, 2 hours after the exposure, 10:51:44  
 11 for some individuals, you would see a half a gram of free 10:51:52  
 12 hemoglobin per 100 mls, somewhere in that nature. That would 10:51:59  
 13 be indicative. 10:52:07  
 14 But that same individual may take longer than that 10:52:08  
 15 to have the hemolysis, and therefore have reduced hemoglobin 10:52:12  
 16 that's in the red blood cells and increased hemoglobin that's 10:52:18  
 17 free in the plasma, noncellular. Because what you've really 10:52:21  
 18 done is you're weakening the membrane of the red blood. And 10:52:30  
 19 some individuals -- it takes time for those then weakened 10:52:40  
 20 membranes to be ruptured. And until they rupture, you're not 10:52:46  
 21 going to get a reduction in the amount of hemoglobin that's in 10:52:54  
 22 cells or you're not going to get an increase in the amount of 10:52:57  
 23 hemoglobin that's free in the plasma. 10:53:01  
 24 Q. What is the usually-accepted range of time for that 10:53:03  
 25 response to occur? 10:53:07

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1 On the other hand, if you're asking if there is a 10:43:24  
 2 level above which you would say yes, this really is exposure 10:43:28  
 3 in general, then, yes, sir, you could define that. 10:43:32  
 4 Q. And what's that? 10:43:35  
 5 A. I would have to recollect my notes on this. 10:43:36  
 6 Q. Please take your time. 10:43:39  
 7 (The witness reviewed records from 10:43 a.m. to 10:43:39  
 8 10:50 a.m.) 10:43:39  
 9 BY MR. TUCKER: 10:38:14  
 10 Q. And the answer is? 10:49:52  
 11 A. Well, almost anybody would say below 10 grams per 10:49:53  
 12 100 milliliters; 10 1/2 would generally also be acceptable. 10:49:59  
 13 But, again, that's where you get in the range of individual 10:50:04  
 14 variation. 10:50:08  
 15 Q. Now, tell me, you gave me a reference value, but you 10:50:08  
 16 didn't identify what it was for. 10:50:15  
 17 A. Milligrams of -- or grams of hemoglobin per 100 mls 10:50:16  
 18 of blood. 10:50:24  
 19 Q. And you say below that? 10:50:25  
 20 A. Yes, sir. You get a reduction in -- your free 10:50:27  
 21 hemoglobin is released and therefore you have a lower level -- 10:50:34  
 22 is strained out in the system, a lower level of hemoglobin. 10:50:37  
 23 Q. And looking at plasma hemoglobin values, what number 10:50:41  
 24 would that be? 10:50:45  
 25 A. Most people would -- well, it depends on when you 10:50:46

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1 A. Can be within 2 hours, can be as long as 24 hours 10:53:08  
 2 for some individuals. 10:53:17  
 3 Q. Okay. Now, getting back to my original question: 10:53:18  
 4 What level in there, comparing it to this less than 10 grams 10:53:24  
 5 per 100 milliliters of hemoglobin, what does that translate to 10:53:30  
 6 in plasma free hemoglobin? 10:53:35  
 7 A. Less than 10 or 10 1/2 grams per 100 ml in 10:53:38  
 8 cell-bound hemoglobin, you're looking there at something on 10:53:45  
 9 the order of half a gram or less per 100 ml. 10:53:48  
 10 Q. Now, when you say "or less," how much or less? 10:53:56  
 11 A. I'm really not trying to be evasive. It's a complex 10:53:59  
 12 question. It depends on when you take the sample, the time 10:54:08  
 13 and the individual. 10:54:12  
 14 Q. I presume you know what NOEL means, don't you? 10:54:14  
 15 A. Yes, sir. 10:54:18  
 16 Q. What is NOEL? 10:54:18  
 17 A. NOEL is no observable effect level. 10:54:19  
 18 Q. What is the NOEL for arsine? 10:54:24  
 19 A. Oh, it depends on the individual, depends on the 10:54:26  
 20 species. Are you talking in humans? 10:54:31  
 21 Q. Any species you care to remember. 10:54:34  
 22 A. You can see effects -- and it depends on whether 10:54:38  
 23 it's acute or whether it's repeat exposure, but your NOEL is 10:54:44  
 24 somewhere south of 1 ppm, 1 part per million. 10:54:53  
 25 Q. Now, when you say this one-half a gram per 10:55:02

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<p style="text-align: right;">Page 29</p> <p>1 100 milliliters for plasma free hemoglobin, is that the 10:55:06</p> <p>2 generally-accepted number that's used for diagnosis by medical 10:55:10</p> <p>3 doctors? 10:55:14</p> <p>4 A. No, sir. The experts speak of the complexity of the 10:55:16</p> <p>5 problem. If you go to, for example – it's now Dart – used 10:55:28</p> <p>6 to be Ellenhorn's Medical Toxicology, which is probably the 10:55:35</p> <p>7 single source that most people would refer you to – makes the 10:55:39</p> <p>8 point that it depends on whether – again, how much, how long 10:55:48</p> <p>9 a person was exposed, how many times they were exposed, and 10:55:52</p> <p>10 when you draw the sample. 10:55:59</p> <p>11 Q. I have a sense that we're still talking a little bit 10:56:03</p> <p>12 in cross purposes. 10:56:10</p> <p>13 A. Sorry. 10:56:10</p> <p>14 Q. There is a point at which you would say that an 10:56:10</p> <p>15 elevation of plasma free hemoglobin is just an artifact and 10:56:17</p> <p>16 not a consequence of exposure to arsine gas, would you not? 10:56:23</p> <p>17 A. Yes, sir. 10:56:27</p> <p>18 Q. Well, can you tell me what that point is? 10:56:27</p> <p>19 A. And what I'm trying to say is that there is – there 10:56:30</p> <p>20 is variation in terms of the individual to some degree, there 10:56:42</p> <p>21 is variation in terms of when you draw the sample. Within 10:56:46</p> <p>22 those limitations and how many times, how long a person may be 10:56:51</p> <p>23 exposed, within those limitations, you're looking for an 10:56:55</p> <p>24 increase typically. And this is a general rule, and general 10:57:00</p> <p>25 rules never apply all of the time. That's why we call them 10:57:08</p>	<p style="text-align: right;">Page 31</p> <p>1 A. Patty's, P-A-T-T-Y-S, book of toxicology. 10:58:58</p> <p>2 Q. Anyplace else? 10:59:06</p> <p>3 A. There's a fair body of literature. 10:59:09</p> <p>4 Q. Is it contained in either of your reports? 10:59:15</p> <p>5 A. No, sir, I don't believe at this point it is. 10:59:17</p> <p>6 Q. You provided a number of articles on which you 10:59:21</p> <p>7 indicated that you relied – I don't know if you provide them 10:59:23</p> <p>8 but we got them because you had footnotes in your report. Do 10:59:27</p> <p>9 you remember that? 10:59:31</p> <p>10 A. Yes, sir. 10:59:32</p> <p>11 Q. Which of those articles that you relied upon for 10:59:32</p> <p>12 this case contain that statement as to values? 10:59:35</p> <p>13 A. I don't think I reference those values in the 10:59:44</p> <p>14 report, so I may or may not – they may or may not have been 10:59:48</p> <p>15 in there. I would obviously have to refer back to the 10:59:52</p> <p>16 literature. 10:59:56</p> <p>17 Q. Do the articles that you did cite refer to values of 10:59:57</p> <p>18 elevation of plasma free hemoglobin that one would expect to 11:00:04</p> <p>19 find in an arsine exposure? 11:00:09</p> <p>20 A. Yeah, I think several of them, in fact, do, yes, 11:00:10</p> <p>21 sir. 11:00:13</p> <p>22 Q. What number do they use? 11:00:13</p> <p>23 A. It varies from article to article. 11:00:15</p> <p>24 Q. What's the range that you would expect to find in 11:00:18</p> <p>25 the articles that you cited? 11:00:20</p>
<p style="text-align: right;">Page 30</p> <p>1 general rules. 10:57:13</p> <p>2 But an increase of more than a tenth to two-tenths 10:57:13</p> <p>3 of a gram of free hemoglobin per plasma would be taken to be a 10:57:25</p> <p>4 sign that, yes, there was exposure. Below that, you would 10:57:38</p> <p>5 need to look at it more carefully and consider other things. 10:57:42</p> <p>6 We're talking acute exposure. 10:57:45</p> <p>7 Q. One-tenth to two-tenths of a gram per? 10:57:47</p> <p>8 A. 100 milliliters, a tenth of a liter, if you will. 10:57:52</p> <p>9 Q. And what does that translate to if we were going to 10:57:54</p> <p>10 think in terms of milligrams per deciliter? 10:57:58</p> <p>11 A. Well, a deciliter is a tenth of a liter. 100 mls is 10:58:01</p> <p>12 a tenth of a liter. That's 100 to 200 milligrams per 10:58:07</p> <p>13 deciliter. 10:58:14</p> <p>14 Q. Can you refer me to any published material that says 10:58:14</p> <p>15 that? 10:58:19</p> <p>16 A. I think I probably could, sir. 10:58:21</p> <p>17 Q. Are we going to find that in Dart's medical 10:58:39</p> <p>18 toxicology book? 10:58:42</p> <p>19 A. I think in Dart you will find things that speak of 10:58:43</p> <p>20 that, yes. 10:58:46</p> <p>21 Q. Do you think it will give me that value, one-tenth 10:58:47</p> <p>22 to two-tenths of a gram? 10:58:51</p> <p>23 A. You'll need to look in Dart, you'll need to look in 10:58:53</p> <p>24 Patty's Industrial Hygiene and Toxicology. 10:58:56</p> <p>25 Q. Tabby? 10:58:56</p>	<p style="text-align: right;">Page 32</p> <p>1 A. I wouldn't recollect off the top of my head. I 11:00:22</p> <p>2 would have to look at the articles. 11:00:25</p> <p>3 Q. Would you have read those at the time that you 11:00:25</p> <p>4 referenced them? 11:00:28</p> <p>5 A. Yes, sir. 11:00:29</p> <p>6 Q. Would you have read the entire article or would you 11:00:29</p> <p>7 just look for the points that you wanted to cite them for? 11:00:32</p> <p>8 A. No, I would have read the entire article. 11:00:38</p> <p>9 THE WITNESS: If I could take a break for a drink 11:00:43</p> <p>10 of water, I would appreciate it. 11:00:46</p> <p>11 MR. TUCKER: Sure, you bet. 11:00:49</p> <p>12 (A break was taken from 11 a.m. to 11:06 a.m.) 11:00:49</p> <p>13 BY MR. TUCKER: 11:00:52</p> <p>14 Q. Do you have the Dart book and the Patty book in your 11:06:11</p> <p>15 library? 11:06:20</p> <p>16 A. Yes, sir. 11:06:20</p> <p>17 Q. In your office? 11:06:21</p> <p>18 A. I have Dart. Patty's is actually nine volumes; and 11:06:22</p> <p>19 I have a set of that too, yes, sir. 11:06:27</p> <p>20 Q. Would it be possible for you to ask one of your 11:06:29</p> <p>21 assistants to find one of those two references during the 11:06:32</p> <p>22 lunch hour, perhaps, or by tomorrow? 11:06:36</p> <p>23 A. I think we can do that, yes, sir. 11:06:38</p> <p>24 Q. Great. You noted down here – well, first of all, 11:06:40</p> <p>25 you noted blood levels. What blood levels did you want to 11:06:48</p>

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SHAYNE GAD

July 11, 2005

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<p>1 know about? 11:06:53</p> <p>2 A. Did we have -- I'm sorry. I would have to look at 11:06:54</p> <p>3 the note to answer your question, sir. The question was, did 11:06:57</p> <p>4 they actually have any measured blood levels of arsine and 11:07:02</p> <p>5 arsenic. That was it. 11:07:07</p> <p>6 Q. Were there any levels of arsenic found in any of the 11:07:08</p> <p>7 persons of whose medical records you reviewed? 11:07:14</p> <p>8 A. Not to my knowledge, sir. 11:07:15</p> <p>9 Q. Were any tested for arsenic? 11:07:18</p> <p>10 A. I believe some were and some weren't. 11:07:21</p> <p>11 Q. What were the results of the ones who were tested 11:07:23</p> <p>12 for arsenic? 11:07:26</p> <p>13 A. My memory is, and it may not be perfect, but of the 11:07:27</p> <p>14 13 individuals that I looked at, I don't remember any of them 11:07:32</p> <p>15 having levels of elevated above ambient. You always have some 11:07:35</p> <p>16 arsenic. 11:07:41</p> <p>17 Q. In fact, several were below ambient, weren't they? 11:07:42</p> <p>18 A. I'm not sure that the concept "below ambient" 11:07:46</p> <p>19 generally applies. General background levels. 11:07:58</p> <p>20 Q. Before we took our break, you were looking at your 11:08:01</p> <p>21 medical reports there to determine whether -- not reports but 11:08:09</p> <p>22 the peer-reviewed articles that you footnoted in your two 11:08:16</p> <p>23 reports to determine whether or not there was any plasma free 11:08:21</p> <p>24 hemoglobin level called out in those reports as considered to 11:08:26</p> <p>25 be diagnostic for arsine exposure. Did you find any? 11:08:30</p>	<p>1 from where we are, aren't they, in Research Triangle Park, 11:10:30</p> <p>2 North Carolina? 11:10:34</p> <p>3 A. Well, they were. I'm not sure they still are. 11:10:35</p> <p>4 Q. What does this article have to do with? 11:10:40</p> <p>5 A. This is -- it's a New England Journal of Medicine 11:10:43</p> <p>6 article. It's entitled "Arsine Poisoning," and you're right, 11:10:51</p> <p>7 the authors who wrote this were within IEHS here at RTP. And 11:11:01</p> <p>8 it has to do with, like I said, the usual introduction and 11:11:10</p> <p>9 background and then clinical features of what you get when you 11:11:14</p> <p>10 have an acute single exposure to arsine gas. 11:11:21</p> <p>11 Q. Now, did you highlight that report? 11:11:26</p> <p>12 A. I did, sir. 11:11:28</p> <p>13 Q. I noticed that you highlighted something under 11:11:29</p> <p>14 "Clinical Features"? 11:11:33</p> <p>15 A. Yes, sir. 11:11:35</p> <p>16 Q. What are clinical features, by the way? 11:11:36</p> <p>17 A. They are typically things that have to do with 11:11:40</p> <p>18 medical diagnosis. Usually they are laboratory measurable 11:11:45</p> <p>19 values. 11:11:50</p> <p>20 Q. I noticed one of these authors is a Ph.D. Is 11:11:50</p> <p>21 Dr. Fowler a toxicologist? 11:11:56</p> <p>22 A. I think Dr. Fowler is actually a pathologist. 11:12:03</p> <p>23 Q. And Dr. Weissberg is an M.D.? 11:12:07</p> <p>24 A. Yes, sir. 11:12:09</p> <p>25 Q. Now, I noticed under "Clinical Features" that you 11:12:09</p>
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<p>1 A. No, sir. And the "no, sir," is to the first 11:08:34</p> <p>2 question. I wasn't looking for that. This pile I have in 11:08:37</p> <p>3 front of me are those things that I was provided with or 11:08:44</p> <p>4 looked at before I rendered an opinion that I thought I might 11:08:48</p> <p>5 be of help or not. 11:08:54</p> <p>6 Q. All right. Do the articles that you mentioned in 11:08:55</p> <p>7 Dart and Patty's have a range as to plasma free hemoglobin? 11:09:00</p> <p>8 A. There are general ranges in them, yes, sir. 11:09:10</p> <p>9 Q. On this question of plasma free hemoglobin and 11:09:13</p> <p>10 arsine, do they have a range in that discussion? 11:09:16</p> <p>11 A. I believe they do, sir. 11:09:20</p> <p>12 Q. And in the reports that you chose to footnote -- I 11:09:23</p> <p>13 keep calling them reports, but the peer-reviewed articles that 11:09:30</p> <p>14 you cited as footnoted parts of your reports, did those have a 11:09:34</p> <p>15 range or did they just have a straight number? 11:09:39</p> <p>16 A. I believe it varied between them. Most of them 11:09:41</p> <p>17 would have a range. Some of them would have a range; some 11:09:44</p> <p>18 would have a number. 11:09:52</p> <p>19 Q. Well, let me just ask you to look through, if you 11:09:53</p> <p>20 would, one example is "Arsine Poisoning" by Fowler and 11:09:56</p> <p>21 Weissberg. Do you have that article with you? 11:10:02</p> <p>22 A. I probably do. Weissberg, I think. 11:10:04</p> <p>23 Q. I'm sorry. I didn't know the man. 11:10:11</p> <p>24 A. John Weissberg and Joseph Fowler. 11:10:23</p> <p>25 Q. Now, the guys who wrote that are just down the block 11:10:26</p>	<p>1 highlighted that section that you reported to me, which is 11:12:14</p> <p>2 "There is a delay of 2 to 24 hours before manifestations 11:12:17</p> <p>3 occur"; is that right? 11:12:22</p> <p>4 A. Yes, sir. There was usually a delay. 11:12:24</p> <p>5 Q. That was of interest to you and you chose to 11:12:24</p> <p>6 highlight that? 11:12:26</p> <p>7 A. Yes, sir. 11:12:27</p> <p>8 Q. Look down at the last paragraph under "Clinical 11:12:27</p> <p>9 Features." 11:12:31</p> <p>10 A. Yes, sir. 11:12:32</p> <p>11 Q. Did you read that before? 11:12:32</p> <p>12 A. Yes, sir. 11:12:34</p> <p>13 Q. And the note there that hemoglobin concentrations of 11:12:34</p> <p>14 less than 10 grams per 100 milliliters are not unusual? 11:12:39</p> <p>15 A. Yes, sir. 11:12:45</p> <p>16 Q. And that's what you told me earlier today, isn't it? 11:12:45</p> <p>17 A. Yes, sir. 11:12:47</p> <p>18 Q. But look on down at the last sentence in that 11:12:48</p> <p>19 paragraph, do they use -- give values for plasma free 11:12:50</p> <p>20 hemoglobin? 11:12:55</p> <p>21 A. They give an upper range, yes, sir. 11:12:55</p> <p>22 Q. And you consider that to be an upper range? 11:12:58</p> <p>23 A. Yes, sir. They're saying -- read them in context. 11:13:01</p> <p>24 Let's do the first one you cited. "Hemoglobin concentrations 11:13:05</p> <p>25 of less than 10 grams per 100 ml are not unusual." Okay? 11:13:11</p>

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<p style="text-align: right;">Page 37</p> <p>1 Values greater than that are also seen. 11:13:18</p> <p>2 Let's go down to the second piece you were asking 11:13:22</p> <p>3 about, "Plasma hemoglobin values of greater than 2 grams per 11:13:25</p> <p>4 100 ml are reported." They don't have to be that high. This 11:13:32</p> <p>5 is sort of an extreme value that you'll see in these kinds of 11:13:37</p> <p>6 exposures. 11:13:41</p> <p>7 Q. Look at the first sentence of the next paragraph. 11:13:41</p> <p>8 A. Yes, sir. 11:13:46</p> <p>9 Q. It says "Examination of the urine shows 11:13:49</p> <p>10 hemoglobinuria." 11:13:53</p> <p>11 A. Yes, sir. 11:13:54</p> <p>12 Q. What is that? 11:13:54</p> <p>13 A. That is — you call it blood in the urine. It's 11:13:57</p> <p>14 hemoglobin in the urine. Typically, people will do a dip test 11:14:01</p> <p>15 or a stick test in a urine sample to show that there is free 11:14:06</p> <p>16 hemoglobin there. 11:14:11</p> <p>17 Q. What is hematuria? 11:14:12</p> <p>18 A. Hematuria. I'm not copying, sir. 11:14:14</p> <p>19 Q. I thought hematuria was blood in the urine. 11:14:22</p> <p>20 A. It could be also. 11:14:27</p> <p>21 Q. Am I wrong about that? 11:14:28</p> <p>22 A. I'm used to calling hemoglobinuria that, in fact, 11:14:30</p> <p>23 you get hemoglobin in the urine. 11:14:34</p> <p>24 Q. Can you have a positive dip test and not have 11:14:35</p> <p>25 hemoglobinuria? 11:14:45</p>	<p style="text-align: right;">Page 39</p> <p>1 A. I'm trying to think of all of the possibilities. 11:16:32</p> <p>2 Generally, no, you cannot. 11:16:50</p> <p>3 Q. Would that be something that a medical doctor would 11:16:52</p> <p>4 be in a better position to answer than you? 11:16:55</p> <p>5 A. I'm sorry? 11:16:57</p> <p>6 Q. Is that a question a medical doctor would be in a 11:16:59</p> <p>7 better position to answer that you, perhaps? 11:17:01</p> <p>8 A. Might be, might not. I'm used to -- we may be 11:17:04</p> <p>9 talking different discourses is the problem, sir. 11:17:17</p> <p>10 Q. How do you define "hemoglobinuria"? 11:17:22</p> <p>11 A. That I have free hemoglobin that I can measure in 11:17:28</p> <p>12 the urine, the coloration. 11:17:32</p> <p>13 Q. And you measure that with the dipstick? 11:17:36</p> <p>14 A. You typically measure that with — it's actually 11:17:38</p> <p>15 measuring in iron. 11:17:43</p> <p>16 Q. How does that give you the level of hemoglobinuria 11:17:44</p> <p>17 to measure with the dipstick? 11:17:47</p> <p>18 A. Well, it just tells you it's present. That's what I 11:17:49</p> <p>19 was trying to say. It's a qualitative test. 11:17:51</p> <p>20 Q. So how do you quantify the hemoglobin in the urine? 11:17:53</p> <p>21 A. Well, it will give you a range of coloration, which 11:17:57</p> <p>22 you measure against a standard, and that will give you, it's 11:18:02</p> <p>23 in this range, it's in this range. It's categorical. If you 11:18:08</p> <p>24 want to measure more than that, you have to use a different 11:18:13</p> <p>25 method than a dipstick. You typically would use HPLC or one 11:18:17</p>
<p style="text-align: right;">Page 38</p> <p>1 A. Yes, sir. 11:14:46</p> <p>2 Q. How could you do that? 11:14:47</p> <p>3 A. Well, depending on the sensitivity of the urine and 11:14:51</p> <p>4 the person involved. Typically, the answer is — or we 11:15:05</p> <p>5 usually depend on the dip test. If it's positive, that means 11:15:09</p> <p>6 you do have the condition. 11:15:13</p> <p>7 Q. Have which condition? 11:15:14</p> <p>8 A. Hemoglobinuria. In other words, you've got free 11:15:15</p> <p>9 hemoglobin in the urine. The same as proteinuria, that you 11:15:19</p> <p>10 have, in fact, an increased level of protein. 11:15:24</p> <p>11 Again, the dip test, the reason we call it that is 11:15:26</p> <p>12 it's a strip. It shows some change in coloration in a certain 11:15:29</p> <p>13 level, but it's not really a precise measurement. It's more 11:15:36</p> <p>14 qualitative. 11:15:40</p> <p>15 Q. What is free blood in the urine called? Red blood 11:15:41</p> <p>16 cells in the urine, what's that called? 11:15:54</p> <p>17 A. Just that, you find blood in the urine. 11:15:57</p> <p>18 Q. Does the dipstick test distinguish between blood in 11:16:04</p> <p>19 the urine and hemoglobinuria? 11:16:13</p> <p>20 A. Yes, sir, it would. 11:16:17</p> <p>21 Q. Is blood in the urine the same thing as free plasma 11:16:18</p> <p>22 hemoglobin in the urine? 11:16:23</p> <p>23 A. Say that again, sir. 11:16:24</p> <p>24 Q. Can you have red blood cells in the urine and not 11:16:26</p> <p>25 have plasma free hemoglobin in the urine? 11:16:29</p>	<p style="text-align: right;">Page 40</p> <p>1 of the other methodologies. 11:18:24</p> <p>2 Q. Why did it matter to you whether this was state 11:18:26</p> <p>3 court or federal court? 11:18:48</p> <p>4 A. I was just asking which it was in. It really didn't 11:18:49</p> <p>5 matter. 11:18:53</p> <p>6 Q. Why does it matter to you this concept of zone of 11:18:53</p> <p>7 vulnerability? 11:19:00</p> <p>8 A. Before I could answer whether I could help or not, I 11:19:01</p> <p>9 asked for -- I felt it would be important to be able to 11:19:21</p> <p>10 define, and that's what I was doing, an area that you were 11:19:27</p> <p>11 likely to have exposure. Because if the individuals were not 11:19:32</p> <p>12 in that area at the time or during the time there might have 11:19:35</p> <p>13 been material from this release, then obviously you don't have 11:19:43</p> <p>14 a cause, so how could you have an effect. 11:19:50</p> <p>15 Q. How would you define the zone of vulnerability for 11:19:54</p> <p>16 this accident? 11:19:59</p> <p>17 A. Well, remember that what I was doing there was 11:20:00</p> <p>18 asking people or asking for information of what we had. And I 11:20:04</p> <p>19 believe -- hemoglobinuria is actually blood in the urine. And 11:20:39</p> <p>20 these are the information I was looking at in terms of the 11:20:43</p> <p>21 individuals. So were they, in fact, in proximity. 11:20:51</p> <p>22 Let me answer the question you asked first, as I 11:20:56</p> <p>23 understood it. Were they, in fact, in the range or were the 11:21:00</p> <p>24 individuals in the area which the rupture occurred -- 11:21:04</p> <p>25 Q. No one asked you -- what I asked you is how did you 11:21:08</p>

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<p>1 define the zone of vulnerability? How was that defined to you 11:21:11</p> <p>2 for this accident? Is it 10 feet, 100 feet, 200 feet? What 11:21:16</p> <p>3 is it? 11:21:20</p> <p>4 A. The question on there was asking them to define it. 11:21:21</p> <p>5 Q. Asking them? 11:21:24</p> <p>6 A. Right. 11:21:26</p> <p>7 Q. Who are "them"? 11:21:26</p> <p>8 A. What information do we have in terms of where there 11:21:27</p> <p>9 would have been exposure; were there measurements, either at 11:21:32</p> <p>10 the time or post. Now, subsequent to that, you're asking a 11:21:40</p> <p>11 slightly different question, and I should let you define it. 11:21:50</p> <p>12 Q. You wrote down on your little note here, "zone of 11:21:54</p> <p>13 vulnerability." 11:21:58</p> <p>14 A. Yes, sir. 11:21:59</p> <p>15 Q. I'm not too good at this, but that indicates to me 11:22:00</p> <p>16 that there comes a point when you walk away from the place the 11:22:03</p> <p>17 accident occurred, you're no longer vulnerable. 11:22:07</p> <p>18 MR. WARD: Object to the form. That's not a 11:22:11</p> <p>19 question. 11:22:13</p> <p>20 BY MR. TUCKER: 10:15:29</p> <p>21 Q. That implies to me that if there is a zone of 10:15:29</p> <p>22 vulnerability that you've got to define what that zone is. 11:22:16</p> <p>23 I'm trying to find out how you define the zone of 11:22:20</p> <p>24 vulnerability. How did you do that and what is it? 11:22:23</p> <p>25 MR. WARD: Objection. 11:22:26</p>	<p>1 were you were talking about? 11:24:15</p> <p>2 A. Yes, sir. They're marked in red. 11:24:16</p> <p>3 Q. The two that were fairly close are? 11:24:20</p> <p>4 A. Gordon Lane. And actually there -- it's not three 11:24:23</p> <p>5 people. There is a whole list of people that were in this 11:24:28</p> <p>6 building, ranging from Rafael Ramirez to Robin Knollenberg. 11:24:32</p> <p>7 So there's a list of people that -- 11:24:38</p> <p>8 Q. What's the number on that building on that map? 11:24:38</p> <p>9 A. Five. 11:24:40</p> <p>10 Q. And then the person that's far away? 11:24:41</p> <p>11 A. Tamela Humphrey. 11:24:44</p> <p>12 Q. What distance? You're saying they're fairly close. 11:24:49</p> <p>13 What is the scale on that map? 11:24:55</p> <p>14 A. There is on this map no scale. It's a street map 11:24:57</p> <p>15 with small roads. 11:25:01</p> <p>16 Q. So when you say "fairly close," do you know how far 11:25:03</p> <p>17 "fairly close" is? 11:25:08</p> <p>18 A. Certainly within 500 yards or so. 11:25:09</p> <p>19 Q. What do you base that on? 11:25:13</p> <p>20 A. It's an industrial park. Like around here, little 11:25:16</p> <p>21 streets; they're done together. 11:25:22</p> <p>22 Q. So when you say "500 yards," that's 500 yards to 11:25:25</p> <p>23 which number on the map? 11:25:29</p> <p>24 A. This would have been to 5 and to 13. 11:25:32</p> <p>25 11:25:47</p>
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<p>1 A. Let me answer your question again. The context of 11:22:27</p> <p>2 that was asking them for information as to what they had. 11:22:30</p> <p>3 BY MR. TUCKER: 10:15:29</p> <p>4 Q. "Them" meaning the lawyers? 10:15:29</p> <p>5 A. Yes, sir. What information might you have that 11:22:35</p> <p>6 would allow me to define that? The information that I was 11:22:38</p> <p>7 given at the time were these charts. 11:22:52</p> <p>8 Q. And what are those charts? 11:22:52</p> <p>9 A. The charts are the locations of individuals. There 11:22:52</p> <p>10 is attached to them those people or the clients that had blood 11:22:53</p> <p>11 in the urine and the levels they had. Some of these levels, 11:22:59</p> <p>12 by the way, are blood in the urine. And they're dipsticks, so 11:23:05</p> <p>13 you get, as I said, categorical; nothing or 1 or 2 or 3. So 11:23:13</p> <p>14 they're not precise levels. That's what you get from a 11:23:17</p> <p>15 dipstick. Okay? 11:23:20</p> <p>16 And for example, in this particular case, I mean, 11:23:22</p> <p>17 there are multiple charts here for multiple individuals. 11:23:26</p> <p>18 There are three and two are relatively close. One person is 11:23:30</p> <p>19 way out here. Obviously, this person out here, you've got 11:23:40</p> <p>20 some blood in the urine but they're fairly far away. 11:23:48</p> <p>21 Now, to define what the real zone is, the 11:23:55</p> <p>22 information that I said you would have to have is weather 11:23:58</p> <p>23 conditions, wind, have we actually measured anything. We then 11:24:01</p> <p>24 go to -- 11:24:07</p> <p>25 Q. Would you identify on the chart who the three people 11:24:12</p>	<p>1 (Gad Deposition Exhibit Number 3 was marked for 11:25:47</p> <p>2 identification.) 11:25:47</p> <p>3 BY MR. TUCKER: 11:25:47</p> <p>4 Q. Let's mark that as Exhibit 3 since we're referring 11:25:47</p> <p>5 to it. 11:25:51</p> <p>6 A. Okay. 11:25:51</p> <p>7 MR. WARD: Are you going to copy that because 11:25:51</p> <p>8 that's part of his file? 11:25:54</p> <p>9 THE WITNESS: My assumption is the court reporter 11:26:00</p> <p>10 will take care of copying it. 11:26:03</p> <p>11 A. I'm sorry. I lost the question, sir. 11:26:05</p> <p>12 BY MR. TUCKER: 11:26:08</p> <p>13 Q. Number 5 is 500 yards; is that right? 11:26:08</p> <p>14 A. That these are within 500 yards of where release 11:26:11</p> <p>15 would have occurred, yes, sir. 11:26:15</p> <p>16 Q. I noticed you looked at counsel -- 11:26:17</p> <p>17 A. No, I didn't. 11:26:17</p> <p>18 Q. -- and counsel nodded his head. 11:26:19</p> <p>19 MR. WARD: No. He was just showing me the 11:26:21</p> <p>20 exhibit. He wasn't looking for information. He was 11:26:24</p> <p>21 just showing me the exhibit he was referring to. 11:26:26</p> <p>22 A. And note, of course, that your Air X-Changers, 11:26:36</p> <p>23 that's where your 5 is, so that's basically the center. Okay? 11:26:43</p> <p>24 BY MR. TUCKER: 11:26:50</p> <p>25 Q. Uh-huh (yes). 11:26:51</p>

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1 A. So what we're really saying is that here we're 11:26:53  
 2 within 500 yards. 11:26:56  
 3 Q. How are you defining that as being part of the zone 11:26:58  
 4 of vulnerability? That's just pretty much where the 11:27:01  
 5 plaintiffs were at the time of the incident, right? 11:27:08  
 6 A. Yes, sir. 11:27:11  
 7 Q. How do you know that's the zone of vulnerability? 11:27:11  
 8 A. Okay. Let's go back to answering the initial 11:27:14  
 9 question first. I asked them to provide me information that 11:27:18  
 10 would allow me -- I said, "You would have to develop 11:27:21  
 11 information in terms of -- or it would be very helpful to 11:27:26  
 12 develop information in terms of where there may have been 11:27:33  
 13 exposure or where the zone of vulnerability." 11:27:34  
 14 On this piece of paper, what you're asking me is a 11:27:37  
 15 list of things that I said they were going to need to define 11:27:40  
 16 and that was general advice to them. 11:27:43  
 17 Q. Now let me ask you this then: How did they define 11:27:45  
 18 the zone of vulnerability? 11:27:47  
 19 A. I'm not sure that they ever actually came back with 11:27:50  
 20 that. Okay. I asked for it. 11:27:54  
 21 Q. But do you have any record that you received it? 11:28:00  
 22 A. No, sir, I do not believe I do. I don't recollect, 11:28:07  
 23 no, sir. 11:28:13  
 24 Q. On Exhibit 1 you identify here an epidemiologist, 11:28:13  
 25 ID epidemiologist. Who did you identify for those folks? 11:28:17

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1 A. I don't remember, sir. 11:28:21  
 2 Q. Would your records reflect that? 11:28:22  
 3 A. I think I looked in a directory and gave them 11:28:25  
 4 several names, but I probably didn't write it down. Because, 11:28:29  
 5 again, at this point I was simply providing information to 11:28:33  
 6 them, and I had no interest or directory in who they might 11:28:37  
 7 choose for that. 11:28:45  
 8 Q. What directory would you look into make that kind of 11:28:45  
 9 referral? 11:28:50  
 10 A. I would look in the Society of Toxi, epidemiology 11:28:51  
 11 specialty section. I would look in the -- in my Rolodex for 11:28:57  
 12 epidemiologists that I dealt with before or may have worked 11:29:10  
 13 with on committees or such before. 11:29:14  
 14 Q. You mentioned a minute ago that some of these folks 11:29:16  
 15 had blood in their urine. 11:29:21  
 16 A. Yes. 11:29:23  
 17 Q. Is the phrase "blood in the urine" and the word 11:29:23  
 18 "hemoglobinuria," are those interchangeable to you? 11:29:31  
 19 A. No, sir. 11:29:34  
 20 Q. What is the difference? 11:29:35  
 21 A. Hemoglobinuria is, in fact, hemoglobin in the urine. 11:29:37  
 22 Hematuria is blood in the urine. In other words, you have 11:29:45  
 23 formed red cells. Again, they're different things. 11:29:50  
 24 Q. You said "blood in the urine." Which context did 11:29:52  
 25 you mean it in for these folks? 11:29:55

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1 A. I'm sorry? 11:29:58  
 2 Q. What kind of blood in the urine did these folks 11:30:01  
 3 have? 11:30:04  
 4 A. Well, in this particular case, these are dipstick 11:30:05  
 5 results and they range from no result in one case or two 11:30:09  
 6 cases, there is nothing reported to trace in some case, and 11:30:16  
 7 plus 1, plus 2, plus 3, plus 4. 11:30:22  
 8 Q. What do plus 1, 2, 3, 4 mean? 11:30:26  
 9 A. Increased amounts of urine. 11:30:29  
 10 Q. It's measuring iron in the urine, right? 11:30:35  
 11 A. Yes, sir. 11:30:38  
 12 Q. And that test alone doesn't tell you whether you 11:30:39  
 13 have blood cells or plasma free hemoglobin, does it? 11:30:43  
 14 A. You have to look under a microscope. You have to do 11:30:46  
 15 a microscopic examination. 11:30:49  
 16 Q. Now, were those examinations performed on these 11:30:49  
 17 folks? 11:30:53  
 18 A. I would have to look at their individual medical 11:30:54  
 19 records. I didn't get all of these people. 11:30:57  
 20 Q. You have a chart there that identifies -- has a 11:30:59  
 21 synopsis of some results there; you have plus 1, plus 2, 11:31:05  
 22 plus 3, plus 4. Did you make up that chart? 11:31:09  
 23 A. No, sir. 11:31:10  
 24 Q. Do you know who made up the chart? 11:31:11  
 25 A. No, sir, I do not. This chart was provided to me by 11:31:13

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1 counsel. 11:31:16  
 2 Q. Does the fact that it says plus 1, plus two, plus 3, 11:31:17  
 3 does that tell you anything other than that those folks had 11:31:22  
 4 blood in their urine from someplace? 11:31:25  
 5 A. On it's own, no, sir. 11:31:28  
 6 Q. And there are lots of things that can cause people 11:31:29  
 7 to have blood in their urine? 11:31:32  
 8 A. Yes, sir. 11:31:34  
 9 Q. Like a kidney infection or urinary tract infection, 11:31:35  
 10 for example? 11:31:40  
 11 A. Could be. 11:31:40  
 12 Q. Heavy exercise, for example? 11:31:41  
 13 A. Fairly transitory with that, but yes, sir. 11:31:44  
 14 Q. Okay. Does your file contain your time records that 11:31:47  
 15 you spent on this case? 11:31:53  
 16 A. Yes, sir. 11:31:55  
 17 Q. Could you pull those out for me? Going back to your 11:31:57  
 18 Filofax -- let me ask you, you have this black book in here, 11:32:05  
 19 and I understand that it probably has nothing to do with this 11:32:11  
 20 case but constitutes your entire professional life? 11:32:13  
 21 A. Unfortunately, that's correct. 11:32:15  
 22 Q. How are we going to separate out what's in there 11:32:19  
 23 that has to do with this case? 11:32:22  
 24 A. The only thing it has to do with this case is the 11:32:22  
 25 little section I read to you. I'm making a note that you 11:32:22

12 (Pages 45 to 48)



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<p>1 asked me to do something. If it didn't get on the list, I'm 11:32:28</p> <p>2 going to forget. So repeat your request. Time on case? 11:32:34</p> <p>3 Q. Yeah. How much have you billed in this case? 11:32:40</p> <p>4 A. I don't know, sir. 11:33:22</p> <p>5 Q. Is that in your file? 11:33:25</p> <p>6 A. I could reconstruct it. I would have to go back to 11:33:27</p> <p>7 my billing directory and look. 11:33:32</p> <p>8 Q. Did you bring your billing records? 11:33:34</p> <p>9 A. No, sir. 11:33:37</p> <p>10 Q. Could you add that to your list of things to do? 11:33:38</p> <p>11 What I would like you to do, if you could, please, since we're 11:33:42</p> <p>12 going to be back here tomorrow, if you would ask your research 11:33:47</p> <p>13 assistants to get some of this stuff together for you, it 11:33:51</p> <p>14 would be really helpful. 11:33:55</p> <p>15 A. I usually do the business part of things. I'm not 11:33:57</p> <p>16 sure that — they're great kids, but — okay. 11:34:02</p> <p>17 Q. Would any notes or e-mails connected with this case 11:34:16</p> <p>18 be in this stack of file materials, either in front of you or 11:34:21</p> <p>19 on that table to your left? 11:34:27</p> <p>20 A. Yes, sir. With the exception of the last three 11:34:29</p> <p>21 weeks, any that I may have received in terms of scheduling 11:34:33</p> <p>22 this particular deposition. 11:34:36</p> <p>23 Q. This deposition? 11:34:38</p> <p>24 A. Yes, sir. 11:34:38</p> <p>25 Q. You were in Madagascar the last three weeks, I'm 11:34:39</p>	<p>1 Q. Will you take a look for me? 11:35:58</p> <p>2 (The witness reviewed materials from 11:36 a.m. to 11:35:58</p> <p>3 11:37 a.m.) 11:36:04</p> <p>4 A. It may have been a report. 11:36:04</p> <p>5 BY MR. TUCKER: 11:36:04</p> <p>6 Q. Let me just suggest to you, while you're looking, 11:36:39</p> <p>7 that plaintiffs have not taken the deposition of Dr. Pike. 11:36:43</p> <p>8 A. Okay. Then it would have been a report. They're 11:36:47</p> <p>9 reports, you're correct. 11:36:53</p> <p>10 Q. As to the 13 folks that you referred to, did you get 11:36:54</p> <p>11 those depositions or are those deposition summaries? 11:36:58</p> <p>12 A. I have affidavits. Actually, I have reports of 11:37:01</p> <p>13 Dr. Carter and Dr. Pike. I have a report from Dr. Banner, 11:37:17</p> <p>14 B-A-N-E-R. 11:37:26</p> <p>15 Q. Let's look through there and see if you have any 11:37:38</p> <p>16 depositions. 11:37:41</p> <p>17 A. They may be just affidavits, sir. Dale Patton. I 11:37:44</p> <p>18 have a deposition from Dale Patton who is one of the 13 11:38:18</p> <p>19 individuals. 11:38:24</p> <p>20 Q. May I see Mr. Patton's deposition. Perhaps I'm 11:38:27</p> <p>21 confused, but what I think of as a deposition is like the 11:38:42</p> <p>22 format like our charming court reporter will prepare for us at 11:38:45</p> <p>23 the conclusion of this event which will be a 11:38:49</p> <p>24 question-and-answer format. 11:38:51</p> <p>25 A. Yes, sir. 11:38:52</p>
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<p>1 guessing? 11:34:43</p> <p>2 A. Yes, sir. I was able to read, sporadically, 11:34:44</p> <p>3 e-mails. 11:34:46</p> <p>4 Q. What has been removed, if anything, from your file? 11:34:46</p> <p>5 A. At this point, absolutely nothing, sir. You asked 11:34:50</p> <p>6 for it all. 11:34:54</p> <p>7 Q. I noticed you had "depo summaries." Deposition 11:34:55</p> <p>8 summaries, summaries of depositions of witnesses? 11:35:00</p> <p>9 A. Yes, sir. 11:35:03</p> <p>10 Q. Did you prepare those summaries? 11:35:04</p> <p>11 A. No, sir. These were sent to me. I got them when I 11:35:06</p> <p>12 got back from Madagascar. 11:35:09</p> <p>13 Q. Prior to coming back from Madagascar, had you 11:35:12</p> <p>14 received deposition summaries? 11:35:16</p> <p>15 A. For? 11:35:18</p> <p>16 Q. For anybody? 11:35:20</p> <p>17 A. Yes, sir. I was in the middle of trying to answer 11:35:21</p> <p>18 you. For Dr. Pike; for Dr. Carter; for the individual — the 11:35:28</p> <p>19 13 individuals here that existed; for, I believe, one of your 11:35:35</p> <p>20 experts in terms of the weather pattern. 11:35:43</p> <p>21 Q. Did you receive deposition summaries from those 11:35:47</p> <p>22 folks or reports? 11:35:50</p> <p>23 A. No. I received the deposition. 11:35:51</p> <p>24 Q. You received a deposition from Dr. Pike? 11:35:53</p> <p>25 A. I believe I did, sir. 11:35:57</p>	<p>1 Q. You've given depositions and you've reviewed and 11:38:52</p> <p>2 signed depositions? 11:38:55</p> <p>3 A. Yes, sir. 11:38:57</p> <p>4 Q. And we just took a preliminary look here and what we 11:38:58</p> <p>5 found here was basically one letter from Mr. Ward's office 11:39:02</p> <p>6 providing you with deposition summaries. I believe they call 11:39:06</p> <p>7 those deposition outlines? 11:39:10</p> <p>8 A. Yes, sir. 11:39:12</p> <p>9 Q. And then with regard to Mr. Patton, is that, in 11:39:13</p> <p>10 fact, a deposition of Mr. Patton? 11:39:18</p> <p>11 A. No, sir, this is deposition index. 11:39:20</p> <p>12 Q. So that's another summary, isn't it? 11:39:22</p> <p>13 A. Yes, sir. 11:39:25</p> <p>14 Q. Now, have you actually seen the deposition? 11:39:26</p> <p>15 A. No, sir. What I have is what's here. 11:39:29</p> <p>16 Q. What is the date that you received the 12 from 11:39:31</p> <p>17 Mr. Ward's office? 11:39:40</p> <p>18 A. The first 12 — 11:39:41</p> <p>19 Q. Deposition summaries or outlines. 11:39:43</p> <p>20 A. I have what are called affidavits from them. 11:39:46</p> <p>21 Q. Well, now, there's a cover letter that sends you 12 11:39:49</p> <p>22 deposition outlines right in front of you there. Do you see 11:39:54</p> <p>23 there? 11:39:57</p> <p>24 A. "Deposition outlines for 12." When I got back from 11:39:57</p> <p>25 Madagascar, sorry. In other words, Sunday. If you look at 11:40:01</p>

13 (Pages 49 to 52)



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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 11, 2005

<p style="text-align: right;">Page 53</p> <p>1 the date, July 7, 2005. 11:40:05</p> <p>2 Q. So did you have any of those deposition summaries or 11:40:10</p> <p>3 outlines before you wrote either of your reports? 11:40:15</p> <p>4 A. No, sir. I had their affidavits. 11:40:18</p> <p>5 Q. Could you show me the affidavits that you're 11:40:22</p> <p>6 referring to? 11:40:25</p> <p>7 A. Yes, sir. And I apologize, but they're not quite 11:40:25</p> <p>8 organized that way. 11:41:24</p> <p>9 Q. As you're looking, let me ask you this question: 11:41:54</p> <p>10 How many affidavits are you looking for? 11:41:57</p> <p>11 A. I believe that there is one for each of these 13 11:42:00</p> <p>12 individuals. For example, they are scattered through here. 11:42:08</p> <p>13 There are these two-paged documents. And there's one for each 11:42:12</p> <p>14 one of them, I believe, scattered through here. 11:42:30</p> <p>15 Q. For each one of the 13 people? 11:42:33</p> <p>16 A. Yes, sir. 11:42:35</p> <p>17 Q. I want you to go back and look at who made this 11:42:36</p> <p>18 affidavit. 11:42:39</p> <p>19 A. I'm sorry. The question is? 11:42:43</p> <p>20 Q. Go back and look at your letter you got from 11:42:47</p> <p>21 Mr. Ward and tell me which of the 13 individuals that is, the 11:42:53</p> <p>22 letter from Mr. Ward that contained the deposition outlines. 11:42:59</p> <p>23 A minute ago you had a letter in front of you from Mr. Ward 11:43:03</p> <p>24 with deposition outlines. 11:43:07</p> <p>25 A. Hold on one second. Question, sir? 11:43:10</p>	<p style="text-align: right;">Page 55</p> <p>1 A. Yes, sir. 11:45:56</p> <p>2 (Gad Deposition Exhibit Number 4 was marked for 11:45:56</p> <p>3 identification.) 11:45:56</p> <p>4 BY MR. TUCKER: 11:45:56</p> <p>5 Q. You're telling me in your file we're going to find 11:45:56</p> <p>6 affidavits for each of those 13 folks? 11:46:02</p> <p>7 A. As I said, I haven't cross-matched these, if these 11:46:05</p> <p>8 are the 13 individuals and -- 11:46:09</p> <p>9 Q. Here's your report on the 13 individuals, sir. 11:46:14</p> <p>10 A. Yes, sir. 11:46:23</p> <p>11 Q. Are you going to have an affidavit from each of 11:46:23</p> <p>12 those 13 folks? 11:46:27</p> <p>13 A. I believe that I did get an affidavit from these 11:46:28</p> <p>14 individuals, yes. 11:46:31</p> <p>15 Q. And we're talking about something separate and 11:46:32</p> <p>16 different from the deposition index; is that right? 11:46:35</p> <p>17 A. Yes, sir. 11:46:38</p> <p>18 Q. We'll look for those at noon. What do the 11:46:40</p> <p>19 affidavits say, these 13 affidavits? 11:46:46</p> <p>20 A. Their name, "I'm over 18 years old." Basically 11:46:53</p> <p>21 occupation, employment, where they were at the time the 11:47:06</p> <p>22 emission occurred, and their observation -- various 11:47:17</p> <p>23 observations associated with that day and their employment. 11:47:24</p> <p>24 Q. When you say -- 11:47:27</p> <p>25 A. For example, here's Mr. Stewart -- 11:47:30</p>
<p style="text-align: right;">Page 54</p> <p>1 Q. Yes, sir. The man you just identified, is he one of 11:43:26</p> <p>2 the deposition summaries you received? 11:43:30</p> <p>3 A. I would have to cross-check. There's only one 11:43:34</p> <p>4 that's not in here. Could I have back the one I handed you so 11:43:39</p> <p>5 I can check the name? This is Bruce Stewart, and he is one of 11:44:31</p> <p>6 the 13 who is not here. 11:45:10</p> <p>7 Q. He's not one of the 13; is that right? One of the 11:45:12</p> <p>8 guys you didn't have was Dale Patton. Number 13 was Dale 11:45:16</p> <p>9 Patton? 11:45:22</p> <p>10 A. Yes, sir. 11:45:22</p> <p>11 Q. Mr. Stewart is not one of the 13? 11:45:23</p> <p>12 A. No, sir. 11:45:25</p> <p>13 Q. Are you telling me in your file you're going to have 11:45:26</p> <p>14 an affidavit of the 13 folks that are in the pile of 11:45:29</p> <p>15 deposition indexes in your right hand? 11:45:33</p> <p>16 A. I have not cross-checked this versus this 11:45:34</p> <p>17 (indicating). 11:45:38</p> <p>18 Q. Didn't you just look to see if Bruce Stewart was in 11:45:38</p> <p>19 that stack? 11:45:42</p> <p>20 A. I looked at that. You're asking about piles versus 11:45:43</p> <p>21 piles. 11:45:46</p> <p>22 Q. So Bruce Stewart is not one of the 13? 11:45:47</p> <p>23 A. No, sir. 11:45:50</p> <p>24 Q. Bruce Stewart made the affidavit under your left 11:45:51</p> <p>25 hand which is Exhibit 4? 11:45:55</p>	<p style="text-align: right;">Page 56</p> <p>1 Q. Mr. Stewart is not one of the 13. 11:47:34</p> <p>2 A. I understand, sir. But you asked me what the 11:47:36</p> <p>3 affidavit said. 11:47:39</p> <p>4 Q. I really want to know of the affidavits of the 13. 11:47:39</p> <p>5 A. Okay. 11:47:39</p> <p>6 Q. If someone is not a plaintiff here today that we're 11:47:43</p> <p>7 not going to go to trial on, I'm not concerned about. 11:47:46</p> <p>8 A. Okay. 11:47:49</p> <p>9 Q. So you generally said they talked about where they 11:47:50</p> <p>10 were and what they observed; is that correct? 11:47:53</p> <p>11 A. Yes, sir. These affidavits are -- I have duplicate 11:47:55</p> <p>12 copies of several of them. 11:48:02</p> <p>13 Q. Have you read the deposition outlines? 11:48:11</p> <p>14 A. I have not read them in detail, sir. 11:48:14</p> <p>15 Q. You came in yesterday from Madagascar? 11:48:21</p> <p>16 A. Yes, sir. 11:48:23</p> <p>17 Q. And you found them at your office this morning. 11:48:26</p> <p>18 A. I actually found them at 2 a.m. Sunday morning when 11:48:27</p> <p>19 we finally got home from the airport. 11:48:31</p> <p>20 Q. Well, was reading those deposition summary outlines 11:48:34</p> <p>21 the number one thing on your mind when you got back from 11:48:37</p> <p>22 Madagascar? 11:48:40</p> <p>23 A. No, sir. Where my lost luggage might be was number 11:48:40</p> <p>24 one and sleeping was number two. 11:48:43</p> <p>25 Q. And have you, as of yet, read those deposition 11:48:45</p>

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<p>1 outlines? 11:48:48</p> <p>2 A. I have looked at them, but I have not read them in 11:48:49</p> <p>3 detail. 11:48:52</p> <p>4 Q. I don't see any tabs on them. So when you say 11:48:53</p> <p>5 you've looked at them, what does that mean? 11:48:56</p> <p>6 A. It means literally I picked them up and went through 11:48:59</p> <p>7 and read some entries in them. But this is several hours', at 11:49:07</p> <p>8 least, effort. And you're right, once they're read they will 11:49:15</p> <p>9 have tabs and highlighting and all those kinds of things. 11:49:19</p> <p>10 Q. How much time did you spend looking over them? 11:49:25</p> <p>11 A. Probably on the order of an hour and a half, and not 11:49:27</p> <p>12 at my best. 11:49:31</p> <p>13 Q. Had you ever read the depositions or deposition 11:49:32</p> <p>14 summaries before you wrote your initial Federal Rule for Civil 11:49:37</p> <p>15 Procedure 26 report? 11:49:43</p> <p>16 A. I did not have these before that. 11:49:44</p> <p>17 Q. In other words, you hadn't had them before and sent 11:49:47</p> <p>18 them back? 11:49:52</p> <p>19 A. No, sir. 11:49:52</p> <p>20 Q. Do you have excerpts of those indexes in your file 11:49:53</p> <p>21 that you had received previously -- 11:49:59</p> <p>22 A. I have not returned anything to counsel. So if I 11:50:17</p> <p>23 have it, it's in this file. 11:50:27</p> <p>24 Q. Other than anything else you might have mentioned 11:50:28</p> <p>25 earlier today, were there materials that you requested that 11:50:31</p>	<p>1 us sitting. 11:53:33</p> <p>2 (Off the record from 11:54 a.m. to 11:58 a.m.) 11:53:33</p> <p>3 BY MR. TUCKER: 11:58:25</p> <p>4 Q. You ended your answer by saying "that leaves us 11:58:25</p> <p>5 sitting." 11:59:03</p> <p>6 MR. TUCKER: Reread the answer. 11:59:47</p> <p>7 THE COURT REPORTER: "Is it a single acute 11:52:58</p> <p>8 exposure around about the rupture of this tank or is 11:52:59</p> <p>9 that one part of exposure or one slice of exposure 11:53:03</p> <p>10 embedded in a pattern of repeated exposures over a 11:53:11</p> <p>11 period of time? If that's the case, that would 11:53:16</p> <p>12 complicate and have to be considered in the 11:53:22</p> <p>13 interpretation of whether there was an effect or not. 11:53:25</p> <p>14 And I guess that leaves us sitting." 11:53:32</p> <p>15 BY MR. TUCKER: 11:59:48</p> <p>16 Q. What kind of exposure are you looking for? 11:59:48</p> <p>17 A. Indications of arsine gas exposure. 11:59:51</p> <p>18 Q. What kind of release are you looking for? 11:59:54</p> <p>19 A. I'm sorry. Define "what kind of." 11:59:56</p> <p>20 Q. You said we're looking for a release history, what 12:00:02</p> <p>21 is a release? 12:00:06</p> <p>22 A. Reportable release. 12:00:07</p> <p>23 Q. What is a reportable release for arsine? 12:00:09</p> <p>24 A. Again, I would have to look up the exact details, 12:00:12</p> <p>25 but there would be a history you would have to report to EPA. 12:00:15</p>
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<p>1 you didn't get? 11:50:34</p> <p>2 A. Yes, sir. I believe there are some things that I 11:50:38</p> <p>3 asked for here that I said before this actually went to trial, 11:51:02</p> <p>4 if they were available. 11:51:09</p> <p>5 Q. What else did you get? 11:51:10</p> <p>6 A. I have not seen -- 11:51:12</p> <p>7 Q. Excuse me just a minute. What did you not get you 11:51:19</p> <p>8 wanted? 11:51:57</p> <p>9 A. I have not seen any electromyograph information. I 11:51:58</p> <p>10 do not believe I have seen a comprehensive release history. 11:52:13</p> <p>11 Q. Why is that important? 11:52:22</p> <p>12 A. Because the issue is -- any kind of effect is 11:52:26</p> <p>13 confounded -- for evaluation, any kind of effect is confounded 11:52:35</p> <p>14 between is there -- are we talking an acute exposure or are we 11:52:36</p> <p>15 talking -- 11:52:41</p> <p>16 Q. I'm sorry. I'm going to have to go cough. Go ahead 11:52:42</p> <p>17 and answer. 11:52:50</p> <p>18 THE WITNESS: Do you want me to continue? 11:52:52</p> <p>19 MS. SMITH: Yes. 11:52:56</p> <p>20 A. Is it a single acute exposure around about the 11:52:57</p> <p>21 rupture of this tank, or is that one part of exposure or one 11:53:01</p> <p>22 slice of exposure embedded in a pattern of repeated exposures 11:53:09</p> <p>23 over a period of time? If that's the case, that would 11:53:15</p> <p>24 complicate and have to be considered in the interpretation of 11:53:22</p> <p>25 whether there was an effect or not. And I guess that leaves 11:53:26</p>	<p>1 EPA sets standards for release of a whole range of toxics. 12:00:20</p> <p>2 Q. Now, are you talking about a single release or are 12:00:24</p> <p>3 you referring to the annual report that all companies must 12:00:30</p> <p>4 make for a toxic release inventory? 12:00:34</p> <p>5 A. And I'm sorry. Say that again, sir. 12:00:39</p> <p>6 Q. Are you talking about a single release or are you 12:00:42</p> <p>7 talking about something in an annual report that all companies 12:00:45</p> <p>8 must file about their TRI? 12:00:48</p> <p>9 A. Both. That's why I call it a release history. 12:00:51</p> <p>10 Q. Well, as to the first part, would that be what the 12:00:54</p> <p>11 EPA considers a reportable quantity? 12:00:58</p> <p>12 A. Generally a reportable quantity would be above 12:01:02</p> <p>13 threshold and you have a summary of them, so yes, sir. 12:01:08</p> <p>14 Q. What are the RQ or preferable quantities set by the 12:01:11</p> <p>15 EPA for arsine gas? 12:01:14</p> <p>16 A. I would have to look it up. 12:01:17</p> <p>17 Q. Do you know? 12:01:18</p> <p>18 A. Not off the top of my head. 12:01:19</p> <p>19 Q. Do you believe that the accident that occurred on 12:01:22</p> <p>20 July 11th, 2001, involved a sufficient quantity of arsine gas 12:01:24</p> <p>21 to reach the threshold of a reportable quantity set by the 12:01:28</p> <p>22 EPA? 12:01:30</p> <p>23 MR. WARD: Object to the form of the question. 12:01:32</p> <p>24 It's already asked and answered. He already said he 12:01:34</p> <p>25 doesn't know. 12:01:36</p>

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SHAYNE GAD

July 11, 2005

<p style="text-align: right;">Page 61</p> <p>1 MR. TUCKER: I asked a little different question. 12:01:36</p> <p>2 MR. WARD: I still object. 12:01:36</p> <p>3 BY MR. TUCKER: 12:01:46</p> <p>4 Q. Do you know whether the amount of arsine gas that 12:01:46</p> <p>5 escaped at the time of the accident on July 11th, 2001, was a 12:01:53</p> <p>6 sufficient quantity to meet the threshold set by the EPA to 12:01:59</p> <p>7 have to report the release as a reportable quantity? 12:02:04</p> <p>8 A. Not as I sit here -- I don't recollect as I sit here 12:02:08</p> <p>9 now, no, sir. 12:02:14</p> <p>10 Q. Do you know whether the quantity of the gas that was 12:02:14</p> <p>11 in that cylinder, every pound of it, had escaped and none of 12:02:20</p> <p>12 it had burned up at the time of the accident -- do you know if 12:02:28</p> <p>13 every pound of gas in that cylinder had escaped, if that would 12:02:28</p> <p>14 reach the threshold level set by the EPA to report a release 12:02:33</p> <p>15 of arsine? 12:02:37</p> <p>16 A. I don't recollect as I sit here, sir. 12:02:38</p> <p>17 Q. What is your understanding of how the reporting 12:02:40</p> <p>18 requirements are with respect to TRIs, toxic release 12:02:56</p> <p>19 inventories? 12:03:03</p> <p>20 A. I'm sorry. Restate the question. 12:03:05</p> <p>21 MR. TUCKER: Could you reread that question, 12:03:31</p> <p>22 please? 12:03:33</p> <p>23 THE COURT REPORTER: "What is your understanding 12:03:33</p> <p>24 of how the reporting requirements are with respect to 12:02:53</p> <p>25 TRIs, toxic release inventories?" 12:02:58</p>	<p style="text-align: right;">Page 63</p> <p>1 the available data and -- I've got to think about what I can 12:05:10</p> <p>2 say here -- essentially give them exposure levels that we 12:05:16</p> <p>3 would have to monitor for in an operational sense that would, 12:05:26</p> <p>4 for a wide variety of agents, arsine being one of them. 12:05:33</p> <p>5 What they're trying to do -- the objective was to be 12:05:40</p> <p>6 able to set, based on the available information for arsine, 12:05:48</p> <p>7 for some of the mustards, for a number of OPs, a number of 12:05:52</p> <p>8 other products or materials, what would be levels below which 12:05:58</p> <p>9 we would degrade operational capabilities in the field. 12:06:05</p> <p>10 Q. What level did you find for arsine gas? 12:06:10</p> <p>11 A. I would have to look back in the modeling, and I'm 12:06:13</p> <p>12 not sure -- I would have to check on that, sir. 12:06:16</p> <p>13 Q. I would like you to identify for me what your 12:06:19</p> <p>14 modeling disclosed as to the minimum for arsine gas, please. 12:06:23</p> <p>15 for the Department of Defense? 12:06:29</p> <p>16 A. I will if I can. 12:06:31</p> <p>17 Q. Do you know that you did it, as to arsine gas? 12:06:32</p> <p>18 A. Yes, sir. The issue is I may not be at liberty to 12:06:36</p> <p>19 do so. 12:06:45</p> <p>20 Q. Well, if you're telling me it's classified, we'll 12:06:45</p> <p>21 get a FOIA request from the Department of Defense and see what 12:06:49</p> <p>22 happens. 12:06:55</p> <p>23 What I first want to know is if you did it; if you 12:07:02</p> <p>24 did it, I would like to know what it is. If you did it for 12:07:05</p> <p>25 reasons that you believe are concerns with the government and 12:07:08</p>
<p style="text-align: right;">Page 62</p> <p>1 A. I would refresh myself on that also, sir. 12:03:36</p> <p>2 BY MR. TUCKER: 12:03:39</p> <p>3 Q. Well, to be fair, Dr. Gad, some of these questions 12:03:39</p> <p>4 I'm asking are pretty much specific to this kind of specific 12:03:45</p> <p>5 area, aren't they? 12:03:49</p> <p>6 A. I'm sorry? 12:03:50</p> <p>7 Q. Some of the questions I'm asking are kind of 12:03:50</p> <p>8 specific to this particular area, having to do with the EPA 12:03:52</p> <p>9 and things of that sort? 12:03:56</p> <p>10 MR. WARD: Object to the form. 12:03:57</p> <p>11 BY MR. TUCKER: 12:03:58</p> <p>12 Q. And to be fair, isn't the predominance of your 12:03:58</p> <p>13 practice having to do with the drug manufacturers and drug 12:04:02</p> <p>14 work? 12:04:07</p> <p>15 A. The majority of my practice currently does have to 12:04:07</p> <p>16 do with pharmaceuticals and devices. However, it is also 12:04:12</p> <p>17 fairly active and very knowledgeable in terms of the 12:04:18</p> <p>18 toxicology part as opposed to the regulatory requirements for 12:04:25</p> <p>19 plant operations. 12:04:30</p> <p>20 Q. How many matters have you looked at before this one 12:04:32</p> <p>21 that the central issue was arsine gas? 12:04:35</p> <p>22 A. One large one. 12:04:40</p> <p>23 Q. What was that? 12:04:45</p> <p>24 A. One of my clients is the Department of Defense, and 12:04:47</p> <p>25 I have been contracted over a number of years to help review 12:04:56</p>	<p style="text-align: right;">Page 64</p> <p>1 you can't tell me what it is, I would like you to give me 12:07:12</p> <p>2 enough information that I can identify it for a 12:07:16</p> <p>3 Freedom-of-Information request to the Department of Defense. 12:07:20</p> <p>4 A. I understand, sir. I would just have to check. 12:07:24</p> <p>5 Q. When you looked at this case, did you rely on the 12:07:27</p> <p>6 results in any study you might have done for the Department of 12:07:35</p> <p>7 Defense? 12:07:39</p> <p>8 A. No, sir. Different question for the Department of 12:07:39</p> <p>9 Defense. You're concerned about generally lower levels and 12:07:42</p> <p>10 different sequelae. You're concerned about, for example, if a 12:07:45</p> <p>11 pilot's capability is degraded, to be able to fly and do 12:07:51</p> <p>12 things. That's generally the most sensitive case we had to 12:07:58</p> <p>13 deal with. Or on the other end, would an infantryman or a 12:08:01</p> <p>14 tank driver be -- his ability. So it's a much more sensitive 12:08:06</p> <p>15 indication than I believe you have in this case. 12:08:11</p> <p>16 Q. Well, let's see if we can't find that number. Is 12:08:14</p> <p>17 there anything else that you didn't get that you wanted to 12:08:18</p> <p>18 get? 12:08:21</p> <p>19 A. I haven't seen the plant. That was one of the 12:08:22</p> <p>20 things that I felt before trial I would need to do. Exposure 12:08:32</p> <p>21 release data of any violation history. 12:08:42</p> <p>22 Q. Did you find any violation history? 12:08:47</p> <p>23 A. I don't believe I've seen that, sir. You asked me 12:08:50</p> <p>24 to identify those things I hadn't received. 12:08:53</p> <p>25 Q. Do you know whether or not the facility had an 12:08:56</p>

16 (Pages 61 to 64)



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1 emission permit having to do with the arsine that it could 12:09:01  
 2 emit? 12:09:06  
 3 A. Sitting here, I don't recollect, but I believe in 12:09:07  
 4 fact there was such. It's a vague memory, sir. It's been a 12:09:18  
 5 couple of years now. But I do know that I didn't get a 12:09:23  
 6 violation history or a summary of releases. 12:09:27  
 7 Q. Anything else you didn't get? 12:09:31  
 8 A. No, sir. I believe of this list, those were the 12:09:33  
 9 things. 12:09:38  
 10 Q. Do you know Robert Harrison? 12:09:39  
 11 A. I've never met the gentleman, sir. 12:09:52  
 12 Q. He's a man in San Francisco who also testifies? 12:09:54  
 13 A. Yes, sir. 12:09:59  
 14 Q. Have you worked with him before on any other case? 12:09:59  
 15 A. No, sir. 12:10:02  
 16 Q. Have you talked with him in this case? 12:10:02  
 17 A. No, sir. 12:10:05  
 18 Q. Have you received any materials from him or sent any 12:10:05  
 19 to him? 12:10:09  
 20 A. Only in that I received -- and it came while I was 12:10:10  
 21 gone -- (indicating) and this is his deposition. 12:10:22  
 22 Q. May I see that? 12:10:28  
 23 A. Yes, sir. 12:10:30  
 24 Q. So for Dr. Harrison, you actually have a deposition 12:10:49  
 25 transcript but you haven't had an opportunity to read it yet; 12:10:53

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1 A. Only in that, frankly, he reported that there was 12:12:04  
 2 data and that there were attachments to it. In terms of his 12:12:15  
 3 opinions, no, sir. 12:12:21  
 4 Q. When you say "data and attachments," what does that 12:12:22  
 5 mean? 12:12:25  
 6 A. They came -- back to my files. We really are 12:12:26  
 7 mix-mastering this at this point. 12:12:30  
 8 THE WITNESS: I apologize if this is how you're 12:12:50  
 9 going to spend your evening. I'm sorry. 12:12:53  
 10 A. With each of the individuals, the 13 individuals I 12:13:03  
 11 was asked to offer an opinion on here, there was from 12:13:07  
 12 Dr. Hastings at the front of each one, I believe, an internal 12:13:10  
 13 medicine evaluation. And in that, there is a list of the 12:13:16  
 14 attached records, so I looked at those to check versus what I 12:13:20  
 15 got. 12:13:27  
 16 There is a patient history, and there's a summary of 12:13:27  
 17 a physical exam, present complaints, some degree of 12:13:38  
 18 measurements in terms of ability to lift weight and flexion 12:13:44  
 19 and so forth. And there are attached even to that, the 12:13:51  
 20 spirometry report in this case, the pulmonary function test. 12:14:01  
 21 Did it provide me information? Yes, sir. In terms of 12:14:08  
 22 opinion, no, sir. 12:14:11  
 23 Q. Can you tell me why you would do a pulmonary 12:14:11  
 24 function test on someone who claims they were exposed to 12:14:20  
 25 arsine? 12:14:25

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1 is that right? 12:10:58  
 2 A. Yes, sir, I haven't had a chance to review it. I've 12:10:58  
 3 glanced at it. That's all. 12:11:02  
 4 Q. I understand that prior to the deposition we paid 12:11:04  
 5 you an advance in the amount of \$4600. Have you received that 12:11:07  
 6 yet? 12:11:11  
 7 A. Yes, sir, I did. 12:11:11  
 8 Q. And that's your charge for providing your testimony 12:11:12  
 9 to me today and tomorrow; is that right? 12:11:15  
 10 A. No, sir. That's to compensate me for my time spent 12:11:17  
 11 in doing this. 12:11:23  
 12 Q. I don't mean I'm buying your opinions. That's the 12:11:24  
 13 charge for your time? 12:11:27  
 14 A. Yes, sir. Sorry. I was trying to be clear. 12:11:28  
 15 Q. And I believe it was for 16 hours? 12:11:30  
 16 A. Yes, sir. 12:11:33  
 17 Q. Do you know a Dr. Hastings in Tulsa, Oklahoma? 12:11:35  
 18 A. I don't personally know him, no, sir. 12:11:39  
 19 Q. Was he one of the persons whose reports you 12:11:43  
 20 reviewed? 12:11:47  
 21 A. Yes, sir. 12:11:49  
 22 Q. Is the CV you gave us today your most current CV? 12:11:50  
 23 A. Yes, sir. 12:11:55  
 24 Q. Was there anything about Dr. Hastings' report that 12:11:56  
 25 you relied upon to reach your opinions in this case? 12:12:01

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1 A. Yes, sir. One of the -- it gets a little 12:14:25  
 2 complicated, I'm afraid. One of the effects that you can have 12:14:32  
 3 might be making worse asthma, or to some degree -- because 12:14:44  
 4 you've destroyed some red blood cells, so to some degree 12:14:56  
 5 you've altered pulmonary function. It's not a primary 12:15:00  
 6 measure. I think it was included primarily just as part of 12:15:04  
 7 everything he looked at. It wouldn't have -- I've answered 12:15:07  
 8 your question, sir. 12:15:12  
 9 Q. Does a pulmonary function test measure lung capacity 12:15:13  
 10 or the transfer of oxygen to the blood? 12:15:19  
 11 A. Lung capacity. It doesn't really measure directly 12:15:21  
 12 the transfer of oxygen to the blood. 12:15:26  
 13 Q. So what does destruction of red blood cells have to 12:15:28  
 14 do with it? 12:15:33  
 15 A. If you destroy red blood cells, the blood has lower 12:15:33  
 16 oxygen-carrying capability. 12:15:40  
 17 Q. So what does a PFT have to do with that? 12:15:45  
 18 A. And if that's the case, you may, in fact, have 12:15:48  
 19 some -- you may require to breathe or intake more air to get 12:15:54  
 20 more to a lower carrying capacity. It's not a primary 12:16:04  
 21 function, no, sir. 12:16:09  
 22 Q. How long does this lower red blood cell count last 12:16:09  
 23 after exposure to arsine? 12:16:16  
 24 A. Well, the literature tells us that -- there's 12:16:17  
 25 obviously some variability there -- typically a couple of 12:16:24

17 (Pages 65 to 68)



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1 days, if it's a single exposure. 12:16:30  
 2 Q. When did Dr. Harrison see -- Hastings see these 12:16:31  
 3 folks relative to when the release occurred? 12:16:38  
 4 A. This is beyond that period of time. 12:16:41  
 5 Q. You've told us today and you've testified before in 12:16:43  
 6 other cases, haven't you, that the bulk of your usual practice 12:16:49  
 7 is to help pharmaceutical companies and medical-device 12:16:52  
 8 companies develop their drugs and get them approved? 12:16:57  
 9 A. Determine if they're safe, yes, sir. 12:17:01  
 10 Q. Safe and effective. Is that the phrase? 12:17:03  
 11 A. I mostly do safety. When I first moved here from 12:17:06  
 12 Chicago they referred to efficacy testing, and I said, "Are you 12:17:11  
 13 guys doing chickens?" And it's a southern shorthand for 12:17:16  
 14 efficacy. 12:17:21  
 15 Q. So your end of that program is to deal with the 12:17:21  
 16 safety aspect of proposing a new medication? 12:17:24  
 17 A. That's primarily it, yes, sir. 12:17:28  
 18 Q. Did you work on the approval process for Celebrex? 12:17:28  
 19 A. No, sir. That was -- I did some of the early safety 12:17:32  
 20 testing, but no, sir. I was gone from Searle before Pharmacia 12:17:38  
 21 bought them, before Pfizer bought Pharmacia, et cetera, 12:17:44  
 22 et cetera. 12:17:44  
 23 Q. But you did work on the safety testing? 12:17:44  
 24 A. Some of the early testing, yes, sir. 12:17:46  
 25 Q. But you did not participate in getting that drug 12:17:48

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1 Q. It says on the sheet "WI," which I think is the 12:19:16  
 2 abbreviation for Wisconsin. 12:19:21  
 3 A. Yeah. The attorney was in Wisconsin. 12:19:22  
 4 Q. But the case was in -- 12:19:24  
 5 A. Indianapolis. 12:19:26  
 6 Q. Who was the attorney in that case? 12:19:28  
 7 A. The attorney who retained me was Jeff Ward, the 12:19:29  
 8 fellow who is named there. 12:19:34  
 9 Q. And he represented Zenith or Lilly? 12:19:37  
 10 A. He was the Zenith side. 12:19:40  
 11 Q. Is that like Zenith televisions? 12:19:43  
 12 A. No, sir. Zenith is a generic drug manufacturer. 12:19:49  
 13 Q. Did you do a Rule 26 report in that case? 12:19:54  
 14 A. Yes, sir. 12:20:00  
 15 Q. Do you have a copy of that report? 12:20:02  
 16 A. I don't know, sir. 12:20:04  
 17 Q. Is that a current case? 12:20:10  
 18 A. No, sir. It was -- the ruling came out about two 12:20:13  
 19 months ago. First of all, my involvement ended with my 12:20:19  
 20 testimony. It would have been February or March of 2004. 12:20:24  
 21 Q. That was just last year? 12:20:30  
 22 A. Yes, sir. 12:20:33  
 23 Q. You wouldn't still have a file on that? 12:20:33  
 24 A. Well, I probably still have a file. I say 12:20:35  
 25 "probably" because the judge ruled on the case about two 12:20:43

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1 approved by the FDA? 12:17:53  
 2 A. No, sir. 12:17:54  
 3 Q. Is it correct -- 12:17:55  
 4 A. Other than my work helped support it, in some cases. 12:17:56  
 5 Q. Is Celebrex still on the market? 12:18:00  
 6 A. Celebrex? 12:18:03  
 7 Q. Yes. 12:18:03  
 8 A. Yes, sir. 12:18:04  
 9 Q. You're not a doctor; is that right? You're not an 12:18:04  
 10 M.D.? 12:18:11  
 11 A. I am not an M.D., no, sir. 12:18:11  
 12 Q. Can you, with your qualifications, diagnose or 12:18:12  
 13 prescribe medicines for patients? 12:18:17  
 14 A. No, sir. 12:18:19  
 15 Q. How many times have you testified in a federal case, 12:18:20  
 16 a case in federal court? 12:18:26  
 17 A. A few. I wouldn't know off the top of my head how 12:18:28  
 18 many. 12:18:36  
 19 Q. Look at your case list, if you would. There don't 12:18:36  
 20 appear to be any case numbers with that case list to be able 12:18:39  
 21 to identify that, but can you tell me which one of those was 12:18:43  
 22 in federal court? 12:18:46  
 23 A. Hold on a second. Ward, Lilly versus Zenith. 12:18:48  
 24 Q. Where was that? 12:19:10  
 25 A. Indianapolis. 12:19:11

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1 months ago, ruled against Zenith in terms of the patent. It's 12:20:48  
 2 a patent case. And the issues would be (a) I probably still 12:20:56  
 3 have the file, but (b) did I retain a copy of the report that 12:21:02  
 4 I generated? 12:21:07  
 5 Q. Would you check for that, please? 12:21:08  
 6 A. Yes, sir. I would be glad to. 12:21:10  
 7 THE WITNESS: While I may have great carrying 12:21:43  
 8 capacity, I need to take a break. 12:21:47  
 9 MR. TUCKER: Okay. 12:21:47  
 10 (A break was taken from 12:22 p.m. to 12:28 p.m.) 12:21:47  
 11 BY MR. TUCKER: 12:27:43  
 12 Q. You say this litigation list you have goes back to 12:27:43  
 13 the year 2000 but only one of those is a federal case; is that 12:27:47  
 14 right? 12:27:51  
 15 A. Yes, sir. 2001. 12:27:51  
 16 Q. 2001. What percentage of the litigation work that 12:27:53  
 17 you do is workers' compensation cases? 12:28:02  
 18 A. Two-thirds. 12:28:05  
 19 Q. A third? 12:28:07  
 20 A. Two-thirds. Roughly two-thirds. 12:28:08  
 21 Q. Not to put too fine a point on it, but you seem kind 12:28:11  
 22 of expensive for workers' compensation cases. 12:28:15  
 23 A. Cost-effective, sir. 12:28:19  
 24 Q. Which of these cases here involve a toxic exposure? 12:28:22  
 25 A. Let's start from the top. The third one down, 12:28:42

18 (Pages 69 to 72)



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1 Marilyn Cooper, the Publix Supermarket case. It was mercuric 12:28:49  
 2 acid. It was a spill in a supermarket in Florida. 12:29:02  
 3 Q. How did they spill mercuric acid? Which department 12:29:07  
 4 shelf was that on? 12:29:08  
 5 A. They were using it as a cleaning solution and 12:29:09  
 6 somebody dropped it. Never underestimate. 12:29:12  
 7 Q. What was your opinion in that case? 12:29:15  
 8 A. My opinion was that the individual, the particular 12:29:17  
 9 individual involved, Cooper, the things that she was claiming 12:29:23  
 10 were no way possibly involved or associated with the exposure. 12:29:27  
 11 Q. Did she have an exposure? 12:29:33  
 12 A. It's questionable whether she really even had any 12:29:34  
 13 exposure. 12:29:36  
 14 Q. Did you have any laboratory values that you could 12:29:36  
 15 look at to help you with your opinion in that case? 12:29:40  
 16 A. We had a physical exam on her, we had medical 12:29:43  
 17 records on her. 12:29:45  
 18 Q. Is mercuric spelled with a "u" or should it be an 12:29:46  
 19 "e"? 12:29:46  
 20 A. I'm sorry? 12:29:46  
 21 Q. Is that as in "mercury"? 12:29:50  
 22 A. No, sir. Mercuric acid is real high-grade 12:29:55  
 23 hydrochloric acid, if you will. It's not M-E-R. It's M-U-R. 12:30:02  
 24 It's correct as written. 12:30:08  
 25 Q. What is the difference between mercuric acid and 12:30:09

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1 A. That would be next to the bottom, "Roger Lee versus 12:32:17  
 2 Mountaineer Farm and the Lee family; respiratory 12:32:29  
 3 complications from chicken houses." 12:32:32  
 4 Q. What did he claim he was exposed to? 12:32:34  
 5 A. The Lee family claimed -- Mr. Lee claimed that they 12:32:37  
 6 were exposed to -- not to put too fine a point on it -- 12:32:48  
 7 chicken shit and the bacterial and fungal decomposition 12:32:57  
 8 products therein; ammonia, mold, endotoxins, et cetera. 12:33:04  
 9 Q. What do they say happened to them? 12:33:09  
 10 A. Their claim was that they had developed asthma, 12:33:12  
 11 breathing difficulties, dermatitis. 12:33:19  
 12 Q. Were any of those complaints subject to evaluation 12:33:24  
 13 by looking at laboratory values from blood tests or other 12:33:29  
 14 medical tests? 12:33:32  
 15 A. Yes, sir. The pulmonary function certainly was. 12:33:33  
 16 The rest of them, by and large, no, sir. They were clinical 12:33:40  
 17 evaluations. 12:33:46  
 18 Q. What about this car case, Dursban exposure? That's 12:33:46  
 19 a toxic, isn't it? 12:33:51  
 20 A. Help me here. 12:33:51  
 21 Q. Six down from the top. Quane Smith from Idaho is 12:33:53  
 22 your lawyer. 12:34:01  
 23 A. That's not a workmen's comp. That's an error in 12:34:02  
 24 this. Forgive me. It should be Best Pest Control, not 12:34:06  
 25 patrol. And it's Dursban exposure. Yes, sir, there was a 12:34:19

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1 muriatic acid? 12:30:16  
 2 A. What else is in there other than the acid ion. 12:30:17  
 3 Q. Was this a breathing exposure? 12:30:21  
 4 A. Yes, sir. 12:30:24  
 5 Q. And does a breathing exposure of -- you said 12:30:25  
 6 hydrochloric acid? 12:30:32  
 7 A. Yes, sir. 12:30:35  
 8 Q. What laboratory values can you work with for an 12:30:36  
 9 exposure to hydrochloric acid? 12:30:41  
 10 A. In her case, it was pulmonary function, that she had 12:30:44  
 11 irritation and drainage. 12:30:49  
 12 Q. Any other toxic matters on here? 12:30:52  
 13 A. Let's work our way down. If you go approximately 12:30:55  
 14 two-thirds of the way down, Christine O'Keefe versus the Board 12:31:06  
 15 of Pharmacy for the State of North Carolina, Levotabs and 12:31:15  
 16 Levsin. Mrs. O'Keefe relocated from California to North 12:31:23  
 17 Carolina, was on Levotabs for thyroid. The pharmacists mixed 12:31:36  
 18 it up and instead gave her Levsin. So (a) she had the 12:31:44  
 19 cardiovascular effects of Levsin, (b) having been taken off 12:31:51  
 20 her thyroid medicine, she gained a great deal of weight very 12:31:57  
 21 quickly. 12:32:03  
 22 Q. I understand that was a pharmacist's error? 12:32:06  
 23 A. Yes, sir. 12:32:10  
 24 Q. What's the next case on this list that involves a 12:32:11  
 25 toxic exposure? 12:32:15

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1 claim by a family that the pest control company had 12:34:25  
 2 inappropriately treated their house with Dursban and that they 12:34:33  
 3 were exposed and they had effects thereof. 12:34:39  
 4 Q. When you're dealing with an exposure to Dursban, 12:34:45  
 5 does it have any effects on anything that reflect abnormal 12:34:48  
 6 laboratory values? 12:34:55  
 7 A. It can. You would get liver enzymes. You would 12:34:56  
 8 get -- you would get some range of clinical chemistries, 12:35:03  
 9 et cetera, but none of that data was, in fact, available in 12:35:08  
 10 that case. In fact, that was part of the basis for resolution 12:35:12  
 11 of the case. 12:35:15  
 12 Q. How is that? 12:35:16  
 13 A. That there really wasn't information to support that 12:35:17  
 14 there had been any harm done. 12:35:34  
 15 Q. If they -- 12:35:41  
 16 A. I'm sorry. Whenever you do these, you need to sort 12:35:43  
 17 of use a modified Hill criteria. You ask yourself some 12:35:46  
 18 questions, they say "Here I am; I've been exposed to X." 12:35:54  
 19 Well, were they exposed to X or not or possibly exposed to X? 12:35:59  
 20 Okay. "I've got these effects." 12:36:05  
 21 Well, the first question you have to ask yourself is 12:36:07  
 22 what did these people's medical records look like before they 12:36:12  
 23 were exposed to X. Did these things -- did they have these 12:36:17  
 24 same conditions and medical complaints before they were 12:36:22  
 25 exposed as when they were exposed? And following that, if it 12:36:27

19 (Pages 73 to 76)



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<p>1 is entirely an acute case, if you then cease exposure, do 12:36:38</p> <p>2 these effects proceed as you would expect toxicity would in 12:36:42</p> <p>3 such a case? If it's rapidly resolvable, if it's something 12:36:50</p> <p>4 that has an acute effect alone and if it goes away, if they're 12:36:54</p> <p>5 not exposed does the condition get better. 12:37:00</p> <p>6 (A discussion was held off the record.) 12:37:00</p> <p>7 BY MR. TUCKER: 12:38:29</p> <p>8 Q. When you say you look at the medical records before 12:38:29</p> <p>9 and after, you're talking primarily about self-reported 12:38:32</p> <p>10 complaints; is that right? 12:38:36</p> <p>11 A. Not entirely. It will be laboratory values also, to 12:38:37</p> <p>12 some degree. This goes back to the fact that there's a lot of 12:38:42</p> <p>13 individual variability. So some people are low in the range 12:38:47</p> <p>14 for various values; some are high. Let's see if we can give 12:38:52</p> <p>15 you an example. Most men, as they get more mature -- 12:38:57</p> <p>16 THE WITNESS: It doesn't apply to you, Air 12:39:24</p> <p>17 Products, because you understand the usage of more 12:39:27</p> <p>18 mature as opposed to another word. 12:39:32</p> <p>19 A. -- your blood iron levels will actually drop some. 12:39:34</p> <p>20 So to consider an effect on blood iron, for example, you would 12:39:39</p> <p>21 really need to see background level and age. 12:39:43</p> <p>22 BY MR. TUCKER: 12:39:46</p> <p>23 Q. Well, with the Dursban exposure, was there any 12:39:46</p> <p>24 laboratory data to support their claim? 12:39:49</p> <p>25 A. No, sir. 12:39:52</p>	<p>1 fallen off a horse and actually punctured a lung. So these 12:42:08</p> <p>2 are the kinds of things you look for to be able to evaluate. 12:42:13</p> <p>3 Q. For example, if someone is complaining of headaches 12:42:17</p> <p>4 and you look at their medical record and you find that prior 12:42:20</p> <p>5 to the event in question, they had been in a car wreck and had 12:42:23</p> <p>6 a fractured skull and complained of headaches that went on for 12:42:27</p> <p>7 weeks after that accident? 12:42:30</p> <p>8 A. If they had a history, you would look at "Do they 12:42:30</p> <p>9 have a history of complaints of headache and the cause 12:42:35</p> <p>10 thereof." Yes, sir, those are the things you look for. 12:42:38</p> <p>11 Q. Look at that Ohio Racing Commission Case, horse 12:42:41</p> <p>12 doping. What was the drug of choice for the horse? 12:42:46</p> <p>13 A. It was actually a nonsteroidal. Mr. Belden, was a 12:42:49</p> <p>14 fairly successful, and still is, breeder of surrey horses and 12:43:02</p> <p>15 raiser in the state of Ohio. And after one of these races, 12:43:09</p> <p>16 they took -- as they do in the state of Ohio, the racing 12:43:15</p> <p>17 commission took a standard sample of blood from the horse to 12:43:18</p> <p>18 look for, was there any doping, and found traces the fourth 12:43:21</p> <p>19 time they tried. The first three times they found nothing. 12:43:27</p> <p>20 don't think Mr. Belden was popular with somebody. 12:43:32</p> <p>21 A fourth time, they found indications that the horse 12:43:35</p> <p>22 -- the samples that were taken, the horse had been doped. The 12:43:38</p> <p>23 consequence of that in the state of Ohio is Mr. Belden would 12:43:45</p> <p>24 lose his license. 12:43:50</p> <p>25 Q. Back to my initial question: What was the dope of 12:43:51</p>
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<p>1 Q. Was it entirely subjective and self-reported? 12:39:54</p> <p>2 A. Yes, sir. And we also ran into the case that 12:39:57</p> <p>3 it's -- discovery yielded no reports of prior medical 12:40:08</p> <p>4 treatment or care or reports. So you couldn't evaluate "Was 12:40:14</p> <p>5 this here before?" You sometimes run into that in cases. 12:40:19</p> <p>6 Q. And when you don't have any prior medical to 12:40:23</p> <p>7 evaluate, what does that mean? 12:40:28</p> <p>8 A. Well, they claim that "I'm coughing a lot." Okay. 12:40:30</p> <p>9 Or "I have asthma because of this," a chemically-induced 12:40:40</p> <p>10 asthma or the more extreme, RADS, or something like that, 12:40:46</p> <p>11 reactive airway disease. Well, if you don't have priors, how 12:40:48</p> <p>12 do we know that didn't occur before. 12:40:53</p> <p>13 In the case of -- let's go back to Lee and 12:40:58</p> <p>14 Mountaineer Farms. The Lees were in their fifties and 12:41:02</p> <p>15 claimed to have never -- well, either (a) never had any prior 12:41:11</p> <p>16 medical treatment -- so Mr. Lee had prescriptions for a number 12:41:18</p> <p>17 of drugs, how he didn't have medical treatment if he had 12:41:23</p> <p>18 prescriptions is beyond me, no one's examined him; or (b) that 12:41:27</p> <p>19 the physician that had treated him in the medical clinic had 12:41:35</p> <p>20 had a fire. 12:41:39</p> <p>21 So, now, mixed in with the records that did come in 12:41:44</p> <p>22 discovery, were some prior medical records that got included 12:41:50</p> <p>23 in discovery which showed, in fact, that at least a couple of 12:41:54</p> <p>24 pieces of information that said Mrs. Lee, for example, had 12:41:59</p> <p>25 asthma before, had a pulmonary-function problem before, had 12:42:03</p>	<p>1 choice? 12:43:52</p> <p>2 A. Well, it was cocktail. 12:43:53</p> <p>3 Q. What was the targeted substance? What was the 12:43:57</p> <p>4 substance that the racing commission was looking for? 12:44:02</p> <p>5 A. They were looking for anything that was -- they were 12:44:05</p> <p>6 looking for any opioids or any steroids or any nonsteroidals. 12:44:08</p> <p>7 Q. And what did they find? 12:44:12</p> <p>8 A. They found -- the fourth time they did it, they did 12:44:14</p> <p>9 find some -- but in this case I think it was some opioids or 12:44:17</p> <p>10 opioid metabolites, actually. 12:44:45</p> <p>11 Q. What was your job in that case? 12:44:49</p> <p>12 A. My job was basically to -- Mr. Belden's attorney had 12:44:51</p> <p>13 retained me. 12:45:01</p> <p>14 MR. TUCKER: Let's go off a minute. 12:45:01</p> <p>15 (A discussion held off the record from 12:45 p.m. 12:45:01</p> <p>16 to 12:47 p.m.) 12:47:13</p> <p>17 A. Was the testing performed credible and properly 12:47:13</p> <p>18 done? Were the results -- particularly considering the first 12:47:17</p> <p>19 three times you got negatives; the fourth time you overrode 12:47:20</p> <p>20 the automated system. How familiar are you with drug testing? 12:47:23</p> <p>21 BY MR. TUCKER: 12:47:29</p> <p>22 Q. I'm very familiar with opioid testing. 12:47:29</p> <p>23 A. Okay. When it's done in a forensic manner, you 12:47:33</p> <p>24 preload the testing cassettes. You do a negative standard run 12:47:37</p> <p>25 and a positive standard. Okay? And in this case, they 12:47:44</p>

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1 overrode the system the fourth time they did it, and there was 12:47:49  
 2 really, in that situation, no verifiable chain of custody with 12:47:55  
 3 the sample. 12:48:04  
 4 Q. So that didn't really have so much to do with 12:48:05  
 5 laboratory values as it did with a sorry job of collecting and 12:48:09  
 6 evaluating samples? 12:48:12  
 7 A. And the laboratory, yes, sir, the analyzing of. 12:48:13  
 8 Q. What about these workmen's compensation cases that 12:48:15  
 9 have to do with cocaine? 12:48:19  
 10 A. Almost all of these are construction. 12:48:21  
 11 Q. How could you tell whether somebody had been exposed 12:48:28  
 12 to cocaine? 12:48:32  
 13 A. Cocaine metabolite. 12:48:32  
 14 Q. Where do you find that? 12:48:39  
 15 A. In the blood or in the urine. You could find it in 12:48:40  
 16 either. 12:48:42  
 17 Q. That was would be a drug tox screen when the folks 12:48:42  
 18 went to the hospital? 12:48:45  
 19 A. Yes, sir. They typically go to the hospital, the 12:48:47  
 20 hospitals take a sample and analyze it because it can 12:48:50  
 21 influence your choice of how you do treatment. 12:48:55  
 22 Q. How do you determine whether someone who has cocaine 12:48:57  
 23 in their -- did you say urine? 12:49:00  
 24 A. Could be urine or blood. Usually the screens are 12:49:02  
 25 urine screens. 12:49:05

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1 more five hours before or so much more three days before. 12:50:54  
 2 Okay? And from that, yes, this is the most likely exposure 12:50:58  
 3 criteria. 12:51:03  
 4 What happens here in North Carolina is typically, 12:51:05  
 5 unless the levels are very high, you have to depend on the 12:51:12  
 6 person basically perjuring themselves. "Well, you're positive 12:51:19  
 7 for cocaine." 12:51:27  
 8 "Well, I didn't use it at all." They have now 12:51:28  
 9 perjured themselves because there is no way you can get a 12:51:32  
 10 positive in both assays on that. Or "Well, yeah, but, you 12:51:36  
 11 know, I just used some and it was six weeks ago." Well, 12:51:42  
 12 again, they perjured themselves because you can do the 12:51:46  
 13 pharmacokinetics. If it was six weeks ago -- by the way, it 12:51:50  
 14 won't last six weeks in the urine or blood -- but if it was 12:51:56  
 15 six weeks ago, we're talking about using so much it would have 12:52:00  
 16 been a fatal dose. 12:52:03  
 17 Q. So using pharmacokinetics you start as your initial 12:52:03  
 18 point, do that analysis, the level that you get off the tox 12:52:07  
 19 screen in blood or urine; is that right? 12:52:12  
 20 A. Yes, sir. 12:52:14  
 21 Q. And from that, you then construct your opinion? 12:52:14  
 22 A. Yes, sir. 12:52:17  
 23 Q. And the only thing that's self-reporting of cocaine 12:52:18  
 24 use does for you in that case unless, of course, they admit it 12:52:28  
 25 is it establishes that they're not telling the truth because 12:52:34

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1 Q. At what level do you determine the person was under 12:49:06  
 2 the influence of cocaine? 12:49:10  
 3 A. Very hard to do. 12:49:11  
 4 Q. Is there a level? 12:49:12  
 5 A. Well, if you measure cocaine, it's easy. 12:49:13  
 6 Q. Okay, you measure cocaine in the blood of the urine, 12:49:17  
 7 what's the level you're looking for that says "This man's been 12:49:23  
 8 under the influence of cocaine"? 12:49:31  
 9 A. I go back to my references on that. But the problem 12:49:31  
 10 actually about cocaine and workmen's comp, typically they 12:49:34  
 11 don't measure the cocaine; they measure the metabolite which 12:49:39  
 12 is essentially pharmacologically inactive. Therefore, when 12:49:43  
 13 you do this kind of thing, you can back calculate what kind of 12:49:47  
 14 levels of cocaine they would have had to have been exposed to 12:49:53  
 15 at different times, and you don't -- a positive screen, 12:49:58  
 16 per se, if all you get -- you've seen a drug screen? 12:50:06  
 17 Q. Yes. 12:50:10  
 18 A. And you know it has a primary level and a 12:50:11  
 19 confirmatory level, all they're doing is saying it's present 12:50:13  
 20 by this test, HBLC or an immune assay at these levels. Based 12:50:17  
 21 on that, all you know is they used cocaine. Okay? 12:50:23  
 22 Well, they have metabolite. You need higher levels 12:50:27  
 23 than that. You need much higher levels, in fact. But you can 12:50:33  
 24 calculate -- you can calculate what kind of exposure would 12:50:40  
 25 have given that if they used so much an hour before or so much 12:50:49

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1 you start having an initial point baseline you could work back 12:52:37  
 2 from? 12:52:38  
 3 A. Bingo. Because though it's illegal to use cocaine, 12:52:39  
 4 it's not illegal -- it's illegal to buy it or sell it. 12:52:43  
 5 Q. What is pharmacokinetics? 12:52:48  
 6 A. The signs associated with understanding levels of 12:52:53  
 7 various materials, let's say drugs, but it could be a toxic 12:53:00  
 8 material. You usually call it toxicokinetics, a non-drug 12:53:06  
 9 toxic, over time and reference metabolism. 12:53:11  
 10 Q. Is pharmacokinetics your main specialty or is that a 12:53:14  
 11 subspecialty? 12:53:17  
 12 A. That's a subspecialty. 12:53:20  
 13 Q. You started with Union Carbide in 1977 and you 12:53:29  
 14 stayed there a couple of years? 12:53:33  
 15 A. Yes, sir. 12:53:34  
 16 Q. Why did you leave after just two years? 12:53:35  
 17 A. Well, I joined what was called Chemical Hygiene 12:53:38  
 18 Fellowship, Carnegie Mellon Institute of Research which was 12:53:51  
 19 Union Carbide's tox lab but was also a contract lab. It was 12:53:57  
 20 both. 12:54:03  
 21 And in early '79, late '78, early '79, there was a 12:54:04  
 22 unionization attempt of the laboratory workers. At that 12:54:15  
 23 point, I was a supervisor so I was technically management. 12:54:20  
 24 For various reasons, we switched from being Carbide 12:54:26  
 25 employees -- they came in one day and took our Carbide ID 12:54:31

21 (Pages 81 to 84)



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1 cards and gave us Carnegie Mellon ID cards, CMIR ID cards. We 12:54:35  
 2 went back to eventually being Carbide employees. But when we 12:54:42  
 3 did and the unionization vote went down, though I received a 12:54:46  
 4 superior rating in my performance, I got a 3 percent raise. 12:55:00  
 5 This is now 1979. I don't know if you remember 12:55:09  
 6 1979, Carter's in office, inflation is running 18 percent or 12:55:13  
 7 so. And I went into the director of the lab and I said, "Why 12:55:18  
 8 did I get a 3 percent raise?" Well, we had to use the money 12:55:24  
 9 to raise the salaries for the technicians, particularly the 12:55:28  
 10 animal care technicians. So there wasn't much money. And I 12:55:33  
 11 said, "That's fine. I can understand that." 12:55:39  
 12 The next day at lunch, one of the pathologists in 12:55:41  
 13 passing said, "Oh, yeah, I only got a 20 percent raise this 12:55:44  
 14 year." I chose not to continue with them, so I sought another 12:55:49  
 15 job, money. 12:55:54  
 16 Q. So then you went to Shell? 12:55:55  
 17 A. Briefly to Shell, yes, sir. 12:55:58  
 18 Q. What did you do at Shell? 12:56:00  
 19 A. Shell was building a toxicology lab to be able to 12:56:02  
 20 comply with what we believed at the time were going to be the 12:56:15  
 21 requirements under TSCA, the Toxic Substance Control Act, for 12:56:17  
 22 testing and doing toxicology. 12:56:21  
 23 Q. Did any of the first two jobs involve work with 12:56:23  
 24 arsine gas? 12:56:28  
 25 A. No, sir, not to my memory. 12:56:29

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1 Q. Why did you leave Shell? You stayed there 12:56:31  
 2 apparently less than a year. 12:56:36  
 3 A. Yes, sir. Reagan was elected. It became clear -- 12:56:37  
 4 how familiar are you with TSCA? 12:56:42  
 5 Q. You tell me. Just tell me why you left Shell. 12:56:47  
 6 A. I left Shell because they decided they weren't going 12:56:49  
 7 to operate the laboratory. TSCA was originally supposed to 12:56:52  
 8 have a minimum data set. Shell eventually closed the lab. In 12:56:56  
 9 fact, almost all of the petroleum labs are gone. 12:57:01  
 10 Q. And then you went to Allied? 12:57:06  
 11 A. Yes, sir. 12:57:08  
 12 Q. And you were there for what? About five years? 12:57:09  
 13 A. Five years, yes, sir. 12:57:09  
 14 Q. Why did you leave Allied? 12:57:09  
 15 A. They got out of toxicology and they closed the lab. 12:57:11  
 16 Q. And then you went to G.D. Searle? 12:57:13  
 17 A. Yes, sir. 12:57:17  
 18 Q. What did you do there? 12:57:17  
 19 A. I started off as director of toxicology in charge of 12:57:18  
 20 preclinical/nonclinical safety testing of drugs. I ended up 12:57:23  
 21 taking over the responsibility -- made senior director and had 12:57:28  
 22 the responsibility for the pathology side of it all. 12:57:33  
 23 Q. Why did you leave? 12:57:38  
 24 A. I was recalled to active duty in 1990. When I got 12:57:39  
 25 back, I was told that -- I was given the letter that said, 12:57:44

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1 "Your new job is this, it has the same title and pay, and it 12:57:51  
 2 has a tenure of one year," which is what the law requires for 12:57:55  
 3 the return of any active-duty assignment. 12:58:00  
 4 Q. So then you left there and went to Becton Dickinson? 12:58:02  
 5 A. Yes, sir. 12:58:06  
 6 Q. What did you do there? 12:58:07  
 7 (Cellphone rings) 12:59:07  
 8 THE WITNESS: Excuse me. 12:59:07  
 9 (Off the record from 12:58 p.m. to 12:59 p.m.) 12:59:08  
 10 A. The Safe Medical Device Act came in in 1990. Becton 12:59:08  
 11 hired me to bring their toxicology lab and then their 12:59:13  
 12 technical services to where we could support all of the 12:59:19  
 13 different divisions at Becton Dickinson. 12:59:22  
 14 Q. But you only stayed there two years? 12:59:25  
 15 A. Yes, sir. 12:59:32  
 16 Q. Why was that? 12:59:33  
 17 A. The job was to get the lab up and running. The 12:59:33  
 18 option at the time was to relocate to Mountain Lakes, New 12:59:44  
 19 Jersey. It was a good job at the time because I was raising 12:59:56  
 20 my kids with a 40-hour-a-week job. Once I had all of my kids 12:59:59  
 21 or most of my kids in school, I didn't want to relocate us to 13:00:06  
 22 New Jersey. So instead, I previously turned down an offer 13:00:09  
 23 from Synergen out in Boulder, and Synergen came back and I 13:00:13  
 24 took that offer. 13:00:19  
 25 Q. I'm going to ask you two questions, and then I'm 13:00:20

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1 going to go cough. What did you do for Synergen and how long 13:00:24  
 2 were you there and why did you leave? 13:00:30  
 3 A. I ran toxicology and pharmacology for Synergen and I 13:00:35  
 4 left because the company went bankrupt. They went belly-up. 13:00:45  
 5 Synergen, if you don't remember, was one of the companies that 13:00:52  
 6 was working on a sepsis drug, and they proved that if you 13:00:56  
 7 repeated a Phase III trial that failed exactly the same way, 13:01:02  
 8 it would fail exactly the same way. 13:01:07  
 9 MS. SMITH: We can go off the record now. 13:01:07  
 10 (Off the record from 1:02 p.m. to 1:03 p.m.) 13:01:07  
 11 BY MR. TUCKER: 13:02:09  
 12 Q. Up until 1994, had you testified in a deposition or 13:02:09  
 13 at trial? 13:02:12  
 14 A. Yes, sir, I believe I had. My executive officer in 13:02:13  
 15 my reserve unit, my warrant officer, I testified in his trial 13:02:23  
 16 or -- 13:02:33  
 17 Q. Court martial? 13:02:35  
 18 A. No. This was a civil matter. 13:02:37  
 19 Q. Well, before 1994, had you testified in a matter 13:02:43  
 20 pertaining to your specialty? 13:02:47  
 21 A. This actually was my specialty. Let me see. Other 13:02:49  
 22 than that -- I think I did, yes, sir, for Allied, for Carbide, 13:03:03  
 23 I think, but it was as a fact witness. 13:03:25  
 24 Q. With respect to -- you testified for your commanding 13:03:28  
 25 officer, you said? 13:03:32

22 (Pages 85 to 88)



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1 A. My executive officer. I was the commanding officer. 13:03:33  
 2 Q. What did you testify for him about in your 13:03:35  
 3 specialty? 13:03:38  
 4 A. It was a DUI. 13:03:39  
 5 Q. When was that? 13:03:48  
 6 A. Oh, 1985, '84. A long time ago, 20 years ago. 13:03:50  
 7 Q. Have you testified in front of -- anything having to 13:04:08  
 8 do with the approval of drug? 13:04:11  
 9 A. Testified or -- 13:04:13  
 10 Q. Appeared for a congressional committee, appeared 13:04:15  
 11 before the FDA? 13:04:19  
 12 A. I frequently deal with the FDA in either meetings or 13:04:20  
 13 advisory committees. 13:04:25  
 14 Q. Did you ever give any testimony or sworn evidence in 13:04:26  
 15 an FDA proceeding? 13:04:31  
 16 A. No, sir. What I'm struggling with is the FDA has 13:04:33  
 17 retained me in a criminal matter as an expert witness, and 13:04:45  
 18 I've done a report for them. 13:04:49  
 19 Q. I'm thinking in terms of things where you 13:04:51  
 20 represented your employer as a drug company. I know on your 13:04:54  
 21 CV you point out that you facilitate the approval of new 13:04:58  
 22 drugs, you told me you work on the safety of new drugs. I 13:05:02  
 23 know the FDA takes testimony sometimes and has hearings. Have 13:05:06  
 24 you ever testified in those hearings? 13:05:11  
 25 A. Actually, no, the FDA doesn't take testimony. What 13:05:11

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1 chemical, consumer product, contract testing, biotechnology, 13:07:17  
 2 medical devices and pharmaceutical industries." 13:07:19  
 3 A. Yes, sir. 13:07:26  
 4 Q. Then you say you're "Experienced in occupational and 13:07:26  
 5 industrial toxicology, development programs, both preclinical 13:07:29  
 6 and clinical" -- 13:07:33  
 7 A. Yes, sir. 13:07:34  
 8 Q. -- "and study design, conduct and reporting." We're 13:07:34  
 9 talking about drugs there, aren't we? 13:07:39  
 10 A. When you get into -- they could be drugs. They 13:07:41  
 11 could also be, in some cases, consumer products. 13:07:50  
 12 Q. Okay. 13:07:53  
 13 A. Nonasthma-inducing forms of Pledge, for example. 13:07:56  
 14 Q. So I don't cough, let me ask you to read the next 13:08:01  
 15 phrase. "In evaluating" -- 13:08:06  
 16 A. "In evaluating clinical and product safety data, in 13:08:11  
 17 training and managing staff, in dealing with a wide range of 13:08:15  
 18 U.S. and foreign regulatory bodies, commercial concerns and 13:08:21  
 19 contract research organizations." 13:08:27  
 20 Q. And then you talk about labeling. 13:08:28  
 21 A. "Labeling and other FDA compliance issues for drugs, 13:08:30  
 22 devices, dietary supplements; identify, developing and putting 13:08:34  
 23 into everyday use new technology in writing reports, position 13:08:41  
 24 papers, material safety data sheets" and then a long string of 13:08:45  
 25 acronyms which are applications for various drug uses. 13:08:51

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1 they do is, the FDA has what's called advisory panels, and 13:05:11  
 2 you're not sworn -- you make a presentation. I've done that a 13:05:15  
 3 lot. 13:05:23  
 4 Q. Prior to starting your own company, had you ever 13:05:23  
 5 been involved with any company that made or used arsine? 13:05:28  
 6 A. Not to my recollection, sir. 13:05:31  
 7 Q. When did you acquire this matter for the defense 13:05:39  
 8 department to evaluate several substances and their effect on 13:05:45  
 9 military personnel? 13:05:50  
 10 A. I think first 1996, '97. 13:05:52  
 11 Q. What was that? 13:06:03  
 12 A. I'm sorry? 13:06:04  
 13 Q. What was that instance? Is that the Department of 13:06:05  
 14 Defense thing? 13:06:10  
 15 A. Yes, sir. 13:06:12  
 16 Q. Do you still have your qualifications summary in 13:06:12  
 17 front of you there? 13:06:17  
 18 A. Yes, sir. 13:06:18  
 19 Q. I count 20 lines of your qualification summary. 13:06:20  
 20 That's basically what you hold yourself out as being able to 13:06:53  
 21 do professionally; is that correct? 13:06:59  
 22 A. Yes, sir. In the sense that obviously it's somewhat 13:07:01  
 23 sided towards giving the kind of business that you want -- 13:07:08  
 24 Q. Well, you say you're a "statistical consultant; a 13:07:11  
 25 manager and consultant on research and development in the 13:07:14

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1 Q. What material safety data sheets have you written, 13:08:55  
 2 for what items? 13:08:59  
 3 A. Probably over the years several hundred, maybe more 13:09:00  
 4 than that. Ranging from -- before a drug is approved -- well, 13:09:09  
 5 if you ship intermediates for a drug, you have to do an MSDS. 13:09:17  
 6 Q. An intermediate would be the components that go 13:09:24  
 7 together to make a drug at the drug factory? 13:09:26  
 8 A. Yes, sir, at the manufacturer. If you have a drug 13:09:31  
 9 that you're shipping in bulk, and particularly if it is not 13:09:34  
 10 yet approved, then you have to have an MSDS if it's crossing 13:09:38  
 11 state lines. It may be what's called a research exclusion 13:09:44  
 12 MSDS; in other words, it says "We don't know." 13:09:47  
 13 And then clients have retained me to do MSDS's for 13:09:50  
 14 some small chemical companies, for some consumer product 13:10:00  
 15 companies that are moving stuff around, for -- just a huge 13:10:06  
 16 range of -- most small companies don't have anybody to do 13:10:11  
 17 this. 13:10:17  
 18 Q. And you say that you prepare labels and package 13:10:18  
 19 inserts for drugs, devices and consumer products? 13:10:21  
 20 A. Yes, sir. 13:10:26  
 21 Q. Would you read the next one for me there? 13:10:26  
 22 A. "In presentations to FDA and in designing 13:10:27  
 23 experiments, designing and executing surveys, in the 13:10:31  
 24 pharmacokinetic and statistical analysis of both experimental 13:10:36  
 25 and clinical data, in risk assessment, in Proposition 65 13:10:39

23 (Pages 89 to 92)



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1 assessments and labeling, in the registration of OTC" — that 13:10:45  
 2 is over-the-counter — "dietary supplement, nutraceutical and 13:10:50  
 3 sterilitant products with FDA, in providing litigation support, 13:10:54  
 4 and in the production and development of biologic products." 13:10:59  
 5 Q. I forget how many lines it is, 18, 20 lines, but you 13:11:03  
 6 don't mention litigation support until we get to the 13:11:08  
 7 next-to-the-last line; is that correct? 13:11:14  
 8 A. Yes, sir. That's a small part of my business. 13:11:16  
 9 Q. In an earlier CV, you listed yourself as providing 13:11:19  
 10 expert testimony in poisoning and occupational toxicology. 13:11:24  
 11 A. Yes, sir. 13:11:26  
 12 Q. Why did you drop that from your current CV? 13:11:27  
 13 A. Didn't really want to draw that much more of this 13:11:30  
 14 business — it's not — I don't want to do more litigation 13:11:35  
 15 support. 13:11:37  
 16 Q. What is the Roundtable of Toxicology Consultants? 13:11:37  
 17 A. It's an association of independent consultants in 13:11:42  
 18 the field of toxicology. 13:11:49  
 19 Q. Do you pay a fee to belong? 13:11:50  
 20 A. Yes, sir. 13:11:52  
 21 Q. Do you take a test to belong? 13:11:53  
 22 A. No, sir. 13:11:56  
 23 Q. In the roundtable, as a part of this referral 13:11:57  
 24 service, is this something you would intend for potential 13:12:00  
 25 clients to look at to determine who they might want to hire 13:12:04

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1 this to you. I'll mark this as Exhibit 5. 13:13:15  
 2 (Gad Deposition Exhibit Number 5 was marked for 13:13:19  
 3 identification.) 13:13:19  
 4 BY MR. TUCKER: 13:13:22  
 5 Q. Tell me if this is what you're referring to. 13:13:22  
 6 A. Yes, sir. This is a little bit old, but, yes, sir. 13:13:27  
 7 Q. Are there listings of specialties in there with 13:13:35  
 8 names of toxicologists under those specialties? 13:13:39  
 9 A. Well, they're indexed that way, yes, sir. 13:13:42  
 10 Q. Well, I have taken the liberty of going through and 13:13:45  
 11 identifying places you have identified yourself. 13:13:50  
 12 A. Yes, sir. 13:13:50  
 13 Q. Dietary supplements? 13:13:52  
 14 A. Yes, sir. 13:13:54  
 15 Q. Medical devices? 13:13:55  
 16 A. Yes, sir. 13:13:56  
 17 Q. Pharmaceutical research and development? 13:13:57  
 18 A. Yes, sir. 13:14:01  
 19 Q. Pharmaceutical regulatory support? 13:14:02  
 20 A. Yes, sir. 13:14:04  
 21 Q. Safety pharmacology? 13:14:05  
 22 A. Yes, sir. 13:14:06  
 23 Q. Biologics, biotherapeutics and statistical data 13:14:07  
 24 evaluation? 13:14:14  
 25 A. Yes, sir. 13:14:14

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1 for a particular job? 13:12:08  
 2 A. Could you say that again? 13:12:09  
 3 Q. Sure. Is it your understanding that this 13:12:11  
 4 roundtable — 13:12:15  
 5 A. My bad hearing and your bad speaking are going to 13:12:15  
 6 get us in trouble yet. You're losing your voice, and I'm 13:12:16  
 7 losing my hearing. 13:12:19  
 8 Q. In the roundtable, there are several toxicologists 13:12:20  
 9 who are a member of the roundtable? 13:12:23  
 10 A. Yes, sir. 13:12:27  
 11 Q. In that roundtable, does their website and other 13:12:27  
 12 information identify the areas in which you offer yourself, 13:12:33  
 13 you as a toxicologist or other toxicologists who are members 13:12:33  
 14 of the roundtable, offer themselves for expertise? 13:12:38  
 15 A. Yes, sir. 13:12:41  
 16 Q. And who selects the areas in which you offer 13:12:41  
 17 yourself for expertise? 13:12:45  
 18 A. You select yourself. 13:12:47  
 19 Q. And are these the areas in which you consider 13:12:48  
 20 yourself expert? 13:12:51  
 21 A. Either expert or that you're seeking potentially 13:12:52  
 22 doing any business in. And you can go to the website and look 13:12:58  
 23 at those lists, that list of abstracts, essentially. Do you 13:13:03  
 24 have the website address? 13:13:10  
 25 Q. I have the printout of the website. Let me hand 13:13:12

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1 Q. Is there a category in there in industrial 13:14:15  
 2 toxicology? 13:14:23  
 3 A. Yes, sir. 13:14:23  
 4 Q. Are you listed there? 13:14:27  
 5 A. Yes, sir. 13:14:28  
 6 Q. Is there a category there of MSDS's, material safety 13:14:28  
 7 data sheets? 13:14:34  
 8 A. I would have to look. I'm ashamed to say I'm the 13:14:36  
 9 person that basically set up the categories. No, sir, I don't 13:14:42  
 10 see any MSDS's here. There may be, but — 13:15:04  
 11 Q. You said no about industrial toxicology, didn't you? 13:15:06  
 12 A. Yes, sir. 13:15:10  
 13 Q. Neurotoxicology? 13:15:10  
 14 A. I think we do have a neurotox here, yes, sir. 13:15:16  
 15 Q. Was the answer to neurotoxicology, no as well? 13:15:20  
 16 A. Yes, sir. 13:15:37  
 17 Q. Occupational toxicology? 13:15:37  
 18 A. Yes, sir. 13:15:39  
 19 Q. Are you listed there? 13:15:40  
 20 A. No, sir. 13:15:41  
 21 Q. Inhalation or environmental, are you listed there? 13:15:41  
 22 A. I don't believe so. 13:15:47  
 23 Q. You said "yes"? 13:15:49  
 24 A. I'm sorry? 13:15:52  
 25 Q. Did you say you are listed or are not listed? 13:15:53

24 (Pages 93 to 96)



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1 A. I said I do not believe so. 13:15:56  
 2 Q. With your CV, you have a long list of various 13:15:58  
 3 publications and presentations. 13:16:02  
 4 A. Yes, sir. 13:16:04  
 5 Q. Would you identify for me the publications or 13:16:05  
 6 presentations that have as their subject "arsine gas"? 13:16:08  
 7 A. I'm not sure there are any, but there may be. Hold 13:16:12  
 8 on. This is terrible. I'm misclaiming a publication. No, I 13:16:22  
 9 didn't. If you look at Number 26. 13:17:09  
 10 Q. What page is that on? 13:17:12  
 11 A. Page 13, sir. 13:17:13  
 12 Q. That's under "Books"? 13:17:17  
 13 A. Yes, sir. "Encyclopedia of Toxicology"? 13:17:21  
 14 Q. Now, is that a book that you wrote? 13:17:26  
 15 A. I was one of the editors. In fact, I wrote the 13:17:29  
 16 arsenic entry on this one, actually. 13:17:32  
 17 Q. Any others? 13:17:35  
 18 A. No, sir, I believe that's it. 13:17:44  
 19 Q. When you say the "arsenic entry," does that discuss 13:17:46  
 20 arsine? 13:17:50  
 21 A. I believe it does, yes, sir. 13:17:51  
 22 Q. What is the "Encyclopedia of Toxicology"? 13:17:56  
 23 A. A four-volume set -- literally, it's an encyclopedia 13:18:08  
 24 in alphabetical order that lists a wide range of materials and 13:18:18  
 25 topics germane to toxicology. They may be chemicals, they may 13:18:26

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1 off a book or presentation abstract from your CV? 13:59:29  
 2 A. No, sir. If could tell me which one it was, I could 13:59:32  
 3 probably answer. 13:59:36  
 4 Q. Has a court ever disallowed your testimony as an 13:59:37  
 5 expert? 13:59:43  
 6 A. No, sir, not to my knowledge. 13:59:44  
 7 Q. In the patent case, were you subjected to what's 13:59:46  
 8 called a Daubert motion? 13:59:50  
 9 A. Yes, sir. 13:59:52  
 10 Q. Did you have a hearing on that or was it done on 13:59:52  
 11 papers only? 13:59:55  
 12 A. I think it was done on papers only. 13:59:55  
 13 Q. And you survived that challenge? 13:59:57  
 14 A. Yes, sir. 14:00:02  
 15 Q. Do you consider yourself an expert in air modeling? 14:00:02  
 16 A. No, sir. 14:00:07  
 17 Q. Do you consider yourself an expert in dose response 14:00:08  
 18 modeling? 14:00:12  
 19 A. Yes, sir. 14:00:13  
 20 Q. Do you consider yourself an expert in biological 14:00:14  
 21 modeling? 14:00:19  
 22 A. I'm going to have to ask you to define what you mean 14:00:20  
 23 by that. 14:00:28  
 24 Q. However you would define it. That's how I would 14:00:28  
 25 like you to answer it. 14:00:31

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1 be drugs, they may be different kinds of tests, they may be 13:18:34  
 2 regulations. It has better than 1200 entries. 13:18:38  
 3 Q. And you wrote the section on arsenic and arsine? 13:18:44  
 4 A. Yes, sir. 13:18:47  
 5 MR. TUCKER: Are you ready for lunch? 13:18:49  
 6 THE WITNESS: Sure. 13:18:52  
 7 (A lunch recess was taken.) 13:52:56  
 8 BY MR. TUCKER: 13:53:01  
 9 Q. Looking at one of your earlier CVs that was an 13:53:01  
 10 exhibit to a deposition that you gave in early 2004 in another 13:58:27  
 11 case and your current CV has one less book than your CV then. 13:58:31  
 12 Do you know why you dropped a book? 13:58:37  
 13 A. No. If I knew the name of the book. 13:58:39  
 14 Q. Do you have a conscious memory of dropping a book 13:58:43  
 15 from your CV? 13:58:46  
 16 A. No, sir. In fact, I generally add them. 13:58:47  
 17 Q. Well, the next question I was going to ask you, your 13:58:50  
 18 old CV list had 174 presentation abstracts. The new one only 13:58:54  
 19 has 173 on it. Why the change? 13:59:00  
 20 A. Normally they don't move that way. They go the 13:59:03  
 21 other way. Now it's 176. 13:59:08  
 22 Q. It's 176 now? 13:59:19  
 23 A. Yeah. I update it typically every three months or 13:59:21  
 24 so. 13:59:26  
 25 Q. Do you have any recollection of why you would take 13:59:26

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1 A. Yes, sir. 14:00:33  
 2 Q. What's your definition? 14:00:33  
 3 A. Modeling of what happens in biologic systems, 14:00:35  
 4 picking biologic models. More to the point; that is, what is 14:00:42  
 5 the appropriate model to look at, to best predict or reflect 14:00:46  
 6 what might happen in man. 14:00:50  
 7 Q. Could the escape of arsine on July 11, 2001, at the 14:00:53  
 8 Port of Catoosa have been modeled? 14:01:00  
 9 A. If there was adequate information, yes, sir. 14:01:02  
 10 Q. Did you suggest that it be modeled? 14:01:06  
 11 A. No, sir. 14:01:08  
 12 Q. Has anyone suggested it to you? 14:01:09  
 13 A. No, sir. No one has asked me to do that. 14:01:11  
 14 Q. Are you aware of anyone performing an air model or 14:01:14  
 15 attempting to do so in this case? 14:01:20  
 16 A. No, sir. I'm aware of two reports that spoke to the 14:01:21  
 17 issue of meteorologic conditions and speed -- wind speed and 14:01:35  
 18 direction for that situation, but I'm not aware of any 14:01:43  
 19 modeling, no, sir. 14:01:46  
 20 Q. Do you consider yourself to be an expert in 14:01:47  
 21 biostatistics? 14:01:51  
 22 A. Yes, sir. 14:01:52  
 23 Q. To do a biostatistical analysis of what happened at 14:01:53  
 24 the Port of Catoosa, what do you need? What things do you 14:02:02  
 25 need to do that? 14:02:07

25 (Pages 97 to 100)



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INGRAM v. AIR PRODUCTS

SHAYNE GAD

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<p style="text-align: right;">Page 101</p> <p>1 A. What's the question you want to ask? That's part of 14:02:07  2 the answer. What I'm asking is you need to define the 14:02:12  3 question you want to ask and the data to be able to do the 14:02:16  4 analysis. And the level of power and probability that you 14:02:20  5 want to be able to do that. 14:02:27  6 Q. Let's say the question is you want to determine 14:02:28  7 whether as a matter of reasonable scientific certainty an 14:02:31  8 individual who was present at the Port of Catoosa on July 14:02:35  9 11th, 2001, suffered any injury as a consequence of exposure 14:02:40  10 to any arsine that may have escaped on that date at that 14:02:44  11 location. 14:02:50  12 A. Not a biostatistical question. 14:02:50  13 Q. That is not? What is a biostatistical question? 14:02:54  14 A. Statistics looks at populations, not individuals; 14:02:59  15 populations of data, populations of people, populations of 14:03:05  16 animals. If you're asking a specific individual, "Was this 14:03:08  17 person or not?"; it's not a population. There's no data to be 14:03:13  18 able to estimate variability of such. 14:03:19  19 Q. Treat the 13 people that are bringing claims and who 14:03:20  20 are going to trial here shortly as your population. Instead 14:03:24  21 of saying "This person," say "Did any of these 13 persons?" 14:03:27  22 A. What you would do in this situation – there is a 14:03:33  23 way to do that when you start talking population as opposed to 14:03:38  24 an individual. And you could do it to where you could 14:03:44  25 address, are individuals within this A group or a band that 14:03:52</p>	<p style="text-align: right;">Page 103</p> <p>1 Q. And you want to know if there is a direct marker, 14:05:18  2 which is the measurement of the material in humans; is that 14:05:24  3 right? 14:05:30  4 A. I'm sorry. Say that again, sir. 14:05:30  5 Q. You want to know if there is a direct marker, which 14:05:30  6 is the measurement of the material in humans? 14:05:33  7 A. Or markers. 14:05:36  8 Q. Marker or markers? 14:05:37  9 A. Yeah, it's a multivariate problem. 14:05:39  10 Q. And in this instance, did you have the pre-July 11th 14:05:43  11 medical records of each of the 13 people? 14:05:52  12 A. No, sir. Only portions thereof. 14:05:54  13 Q. Other than any self-reporting that may have appeared 14:05:57  14 in Dr. Hastings' report, did you have any independent data as 14:06:03  15 to their conditions prior to this event? 14:06:09  16 A. I had medical records from various clinics and so 14:06:10  17 forth that they had seen subsequent to this. 14:06:15  18 Q. I'm talking about prior to the event. 14:06:18  19 A. No, sir, or in portions thereof. 14:06:21  20 Q. What are the direct markers that are the measurement 14:06:23  21 of the response of humans to the material, the target 14:06:30  22 material, here arsine? 14:06:34  23 A. Problem is that there's a wide range of them, and 14:06:35  24 they're different depending on whether we're talking an acute 14:06:40  25 or a repeated or a chronic exposure. The most inconvertible 14:06:46</p>
<p style="text-align: right;">Page 102</p> <p>1 would be different, you would need a comparator group big 14:03:58  2 enough, you would need the data on that comparator group. You 14:04:08  3 would define the fields, analysis, laboratory values, 14:04:16  4 symptomology, et cetera; and you could then do a multivariate 14:04:20  5 analysis that basically would look at "Is this group or a 14:04:27  6 substantial subset of this group different than that 14:04:30  7 comparator population." That's a doable thing. 14:04:37  8 Q. Anything else? 14:04:40  9 A. You would always like more data. 14:04:41  10 Q. In the past, sir, you have testified that doing 14:04:44  11 something of that sort, the first thing you would need is the 14:04:47  12 medical records of each and the background of each person who 14:04:51  13 is part of that group. 14:04:55  14 A. That's the data. 14:04:56  15 Q. You told me that today? 14:04:57  16 A. Yes. 14:04:58  17 Q. Because you want to know what their conditions were 14:05:00  18 prior to the event, correct? 14:05:04  19 A. Yes, sir. 14:05:06  20 Q. And you want to know if there's a change in their 14:05:06  21 condition? 14:05:10  22 A. Yes, sir. 14:05:11  23 Q. And you want to know the quality and quantity of the 14:05:11  24 data available, right? 14:05:16  25 A. Yes, sir. 14:05:17</p>	<p style="text-align: right;">Page 104</p> <p>1 would typically be those that are hematologic. 14:06:56  2 Q. What was the word you used? Inconvertible? 14:07:02  3 Incontrovertible? 14:07:02  4 A. Yes, sir. 14:07:02  5 Q. That means you can't argue with? 14:07:02  6 A. Yes, sir. 14:07:08  7 Q. So you can't argue with hematological? 14:07:08  8 A. If you had hematologic on one end, it's possible 14:07:12  9 with some hematologic data to say this says "yes." But that's 14:07:16  10 a screen question. Screen questions are one-sided. 14:07:20  11 Q. One-sided? 14:07:24  12 A. One-sided. 14:07:26  13 Q. Okay. 14:07:27  14 A. You can answer they are. You can't answer they're 14:07:28  15 not. Many questions we have in toxicology and in medicine or 14:07:34  16 biology are one-sided questions. In other words, if you had 14:07:48  17 pronounced free hemoglobin, plasma hemoglobin levels, 14:07:57  18 pronounced reductions in blood hemoglobin or element 14:08:02  19 hemoglobin, if you had basophilic stippling and you could go 14:08:10  20 on on that list, at certain levels, those things would say 14:08:14  21 "Yes, this says you had that kind of exposure." The lack of 14:08:18  22 them doesn't necessarily say that because, one, you don't 14:08:22  23 know, again, how much exposure; was it a single or was it a 14:08:27  24 group; that is, a series of exposures. 14:08:34  25 And because there is a variability – and we talked 14:08:37</p>

26 (Pages 101 to 104)



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<p style="text-align: right;">Page 105</p> <p>1 about this earlier -- in the time of the response of an 14:08:41  2 individual, you take a blood sample at a certain time, that's 14:08:45  3 what you call a censored value. You only know what you look. 14:08:48  4 So if you happen to look at a time that that individual -- and 14:08:54  5 remember there's variability with an individual -- if you 14:08:58  6 happen to look at a time when that individual was not at that 14:09:01  7 response point, the fact you don't see it doesn't necessarily 14:09:05  8 tell you. It limits to the data is really what I'm saying. 14:09:10  9 Q. Did you find that in the medical data that you 14:09:13  10 reviewed, the hematologic data or blood tests were taken at 14:09:17  11 various times following the event? 14:09:25  12 A. Yes, by and large. 14:09:27  13 Q. Were any of them taken before 2 hours after the 14:09:28  14 event? 14:09:33  15 A. I would have to refresh myself, but I don't believe 14:09:33  16 so, no, sir. 14:09:36  17 Q. Were any of them taken at various points during the 14:09:39  18 first 24 or 48 hours or sometimes even longer? 14:09:43  19 A. Yes, sir. 14:09:47  20 Q. And is it just coincidence that none of those people 14:09:47  21 were reported by the treating physicians as having any 14:09:56  22 elevated levels of plasma free hemoglobin that was consistent 14:09:59  23 with the diagnosis with exposure to arsine? 14:10:03  24 MR. WARD: Object to the form. 14:10:07  25 A. Say it again. Please repeat the question, sir. 14:10:07</p>	<p style="text-align: right;">Page 107</p> <p>1 Q. Did you make that disk or was that given to you? 14:11:48  2 A. No. That was given to me. 14:11:50  3 Q. It's on that disk that you have the medical records 14:11:52  4 of the plaintiffs? 14:11:55  5 A. Yes. It is as labeled, as provided. 14:11:56  6 Q. Did any of those records include medical records 14:11:58  7 prior to the event of July 11th, 2001? 14:12:02  8 A. Scattered pieces, but not much. 14:12:05  9 Q. Okay. 14:12:09  10 A. In those cases where there is some inclusion from -- 14:12:12  11 they were using the same provider or the same hospital over 14:12:18  12 time. 14:12:22  13 Q. You told us that because the sample size of 13 is 14:12:22  14 too small that it might be just a coincidence. Actually, the 14:12:33  15 number of people that received blood tests was much larger 14:12:40  16 than 13, wasn't it? 14:12:45  17 A. Well, let me first speak -- there's two questions in 14:12:46  18 there. It's a compound question. Let me speak to the first 14:12:48  19 part. It's not, per se, it's too small. This is not a 14:12:52  20 controlled designed experiment as is frequently the case. 14:12:59  21 Therefore, there's really not a lot of rigor to the data. You 14:13:05  22 have an individual that -- let's just talk about those 13 -- 14:13:09  23 an individual who a blood draw was taken at a certain time, 14:13:15  24 and just for purposes of conversation, let's say at 2 hours or 14:13:19  25 another one at 24 hours or another one at 12 hours or 14:13:23</p>
<p style="text-align: right;">Page 106</p> <p>1 MR. TUCKER: Could you repeat that question, 14:10:07  2 please? 14:10:07  3 THE COURT REPORTER: "And is it just coincidence 14:09:50  4 that none of those people were reported by the 14:09:53  5 treating physicians as having any elevated levels of 14:09:57  6 plasma free hemoglobin that was consistent with the 14:10:01  7 diagnosis with exposure to arsine?" 14:10:04  8 A. Too small a sample, varying sample times, single 14:10:32  9 sample time for individual by and large, yes, sir, that could 14:10:36  10 simply be coincidence. 14:10:40  11 BY MR. TUCKER: 14:10:44  12 Q. Now you say before you go to trial you want to see 14:10:44  13 the Port of Catoosa. Why would you want to do that? 14:10:48  14 A. Understand the layout, perhaps the logistics of 14:10:51  15 exposure in the situation, get a better definition in terms 14:10:58  16 of -- goes back to your question, what would help define the 14:11:04  17 zone of vulnerability. By and large, you want to have as much 14:11:10  18 information as you can. Certainly, the environment where 14:11:16  19 something occurred is part of that. 14:11:20  20 Q. Is the medical history of these individuals the 14:11:21  21 records that were contained on the disk that you furnished to 14:11:32  22 us? 14:11:37  23 A. The one I had here (indicating). 14:11:37  24 Q. That's the one, yeah? 14:11:43  25 A. Yes, sir, that was provided to me. 14:11:45</p>	<p style="text-align: right;">Page 108</p> <p>1 whatever, and you do not have the 13 individuals, 2 hours, 14:13:29  2 12 hours. If you have that kind of data, then the numbers 14:13:36  3 might be sufficient. You don't have that. You've got 14:13:39  4 essentially, as I said, censored data. You have random 14:13:42  5 measurements in terms of time. 14:13:47  6 Q. But when we talk about the number of people, you 14:13:48  7 really have blood test results or hematologic values on more 14:13:51  8 than 13 people on July 11th, 12th and 13th of 2001, don't you? 14:13:56  9 A. That data exists, yes. 14:14:01  10 Q. Are you aware that none of that data caused the 14:14:04  11 treating physicians to report that these folks were injured by 14:14:08  12 arsine? 14:14:13  13 A. No, sir, I don't think one way or the other. The 14:14:14  14 only data I have is the 13. 14:14:17  15 Q. You don't have the data on the other people? 14:14:19  16 A. That's correct. 14:14:21  17 Q. You said it might be a coincidence that none of them 14:14:22  18 had any blood indications of arsine exposure. It also might 14:14:27  19 not be a coincidence, correct? It might also be that they 14:14:32  20 didn't have any exposure? 14:14:35  21 A. That's possible, sir. 14:14:37  22 Q. Can you tell what it is? 14:14:39  23 A. Not from that piece of information, no, sir. Nobody 14:14:40  24 could. 14:14:43  25 Q. Well, if you just looked at that piece of 14:14:44</p>

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July 11, 2005

<p style="text-align: right;">Page 109</p> <p>1 information and took it at face value, wouldn't the conclusion 14:14:47  2 be that there's no evidence that they were exposed to arsine? 14:14:51  3 A. No, sir. I don't think anyone could, in good faith, 14:14:54  4 make that statement based on just that piece of data. The 14:15:01  5 issue, again, is how much exposure and what kind of effect you 14:15:06  6 see and when you measure for a result. 14:15:12  7 Q. But based on the fact that the data doesn't 14:15:16  8 demonstrate anything, at least if you only have that data to 14:15:20  9 do go by and I say, "Dr. Gad, look at that data and tell me 14:15:23  10 whether these folks have been exposed to something like 14:15:27  11 arsine," could you answer that question? 14:15:31  12 A. I can answer it the following way: I could say, 14:15:32  13 based on this information and in terms of this information 14:15:36  14 only, there is -- or is not an indication that that is the 14:15:39  15 case or is not. 14:15:47  16 Q. You said that there is not an indication? Is that 14:15:47  17 your answer? 14:15:52  18 A. I'm doing the hypothetical. 14:15:52  19 Q. What's your answer to that hypothetical? Is or is 14:15:56  20 not? 14:16:02  21 A. Based on the hematologic data, per se, I do not see 14:16:02  22 a -- and this goes back to where I said this would be a clear 14:16:17  23 signal -- an incontrovertible indication. I do see in this 14:16:23  24 limited data set an indication that there was significant 14:16:29  25 acute exposure in these individuals. 14:16:33</p>	<p style="text-align: right;">Page 111</p> <p>1 Q. But getting back to my real simple question. If all 14:18:09  2 you had to look at was the hematological data on those 13 14:18:15  3 folks -- by the way, what is the target organ for arsine gas? 14:18:20  4 A. There are multiple organs. 14:18:25  5 Q. What's the primary target organ? 14:18:27  6 A. The primary target organ is the hemopoietic system, 14:18:29  7 the blood cell system. 14:18:33  8 Q. And particularly the red blood cells; is that right? 14:18:34  9 A. Yes. 14:18:37  10 Q. Doesn't arsine just love to get into red bloods? 14:18:38  11 A. Initially -- well, get into, no. That's the most 14:18:42  12 sensitive indicator of effect. It's the target -- we would 14:18:46  13 call it the primary target organ because it's the one where 14:18:52  14 you -- you see more indication after significant acute 14:18:56  15 exposure. 14:19:04  16 Q. Does arsine bind to the red blood? 14:19:04  17 A. It binds to elements therein and reacts with the 14:19:09  18 proteins, yes. 14:19:28  19 Q. Does it combine with the hemoglobin in the red cell? 14:19:29  20 A. No, sir, not effectively. It's a membrane effect 14:19:37  21 primarily. 14:19:42  22 Q. When a red blood cell is exposed to arsine, does the 14:19:42  23 hemoglobin escape? 14:19:46  24 A. In some of the cells, you alter, yes, sir. You 14:19:47  25 alter the membrane fragility, therefore you cause a population 14:19:51</p>
<p style="text-align: right;">Page 110</p> <p>1 Q. Let's take out the word "significant." Let's just 14:16:35  2 say "exposure." 14:16:39  3 A. You can't say that. It depends on how much. 14:16:40  4 Q. Okay. 14:16:43  5 A. Dose response again. 14:16:45  6 Q. Looking at those hematologic records, do you see a 14:16:47  7 dose response to arsine? 14:16:52  8 A. No way to answer the question. 14:16:54  9 Q. Well, you had the values. 14:16:57  10 A. You don't have the dose. You don't know -- any one 14:17:01  11 individual, there will be variability and response. As a 14:17:07  12 result, not knowing an individual exposure, time after taken, 14:17:13  13 there is just too much variability in the data. There's no 14:17:17  14 way to do a dose response. 14:17:19  15 Q. What was the word you used? A "significant acute 14:17:19  16 exposure"? 14:17:22  17 A. Yes, sir. 14:17:23  18 Q. What's significant? 14:17:23  19 A. It's concentration and time. The concept that 14:17:26  20 applies -- we're talking about inhalation exposure in these 14:17:40  21 individuals and the concept that applies, it's not just how 14:17:44  22 much inhalation but it's what we call CT. How much the 14:17:49  23 concentration and for what period of time. Okay? The longer 14:17:53  24 the time, typically will lower the concentration that would 14:18:01  25 give you a response that is a signal. 14:18:06</p>	<p style="text-align: right;">Page 112</p> <p>1 of red bloods to become more fragile; therefore they break up 14:19:56  2 more readily, they age, if you will. It accelerates the 14:20:01  3 aging, for all practical purposes. 14:20:06  4 Q. And that's the most, most discrete, what did you 14:20:06  5 say, sensitive marker? 14:20:10  6 A. Not the most sensitive. It's the one that we look 14:20:12  7 for first for a target area. 14:20:16  8 Q. If you look for that first and you don't ever find 14:20:18  9 it in any of these people that were in the Port of Catoosa, 14:20:25  10 what conclusions can you draw from that? 14:20:31  11 A. What I'm struggling with is how to answer your 14:20:34  12 question effectively, sir. From that information alone, I say 14:20:47  13 again, that there was probably not a significant acute 14:20:57  14 exposure. But -- 14:21:07  15 THE WITNESS: Excuse me. 14:21:12  16 (Cellphone rings) 14:21:13  17 (Off the record from 2:20 p.m. to 2:27 p.m.) 14:21:13  18 BY MR. TUCKER: 14:21:21  19 Q. How are you defining "acute exposure"? 14:21:21  20 A. Single exposure over a short period of time, a few 14:27:31  21 hours, a few hours within the space of one day. 14:27:37  22 Q. Explain to me one more time what you mean by 14:27:42  23 significant exposure. Are you referring to a quantity? 14:27:45  24 A. It's quantity and time. Let me give you an example. 14:27:47  25 Q. Try to work it with this gas because we're talking 14:27:52</p>

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<p>1 about a significant exposure over a short period of time in a 14:27:56  2 single event. Significant means what in the context of your 14:28:00  3 answer? 14:28:04  4 A. Let's do the context first and -- it would be easier 14:28:04  5 for you I think to understand. If you were exposed to 5 ppm, 14:28:08  6 2 ppm for a period of an hour or more, you would expect that 14:28:24  7 you would -- somewhere in that range you would expect that 14:28:33  8 you'd start to see significant acute effects. 14:28:37  9 Q. Two ppm for an hour or more? 14:28:42  10 A. Yes, sir. I'm using numbers to put labels to 14:28:46  11 explain the concept. On the other hand, if you were exposed 14:28:50  12 to a lesser amount, let's say 1 ppm for 12 hours, you would 14:29:00  13 expect that you would see, again, an effect. Okay? What I'm 14:29:07  14 trying to say, it's a matter of how much for how long. The 14:29:12  15 longer it takes, the less amount, the less concentration to 14:29:17  16 cause the effect. 14:29:22  17 Q. What's the maximum time of exposure any of these 14:29:22  18 folks would have had an opportunity to even be around the gas 14:29:26  19 during that July 11th event? 14:29:30  20 A. Don't know. I'm not being obstinate. I'm 14:29:32  21 suggesting that if, in fact, the only source was the rupture 14:29:38  22 that occurred, then one would expect that the maximum time for 14:29:42  23 these people would be one to 2 hours. 14:29:48  24 Q. In one to 2 hours, what's the exposure level that 14:29:50  25 you're concerned about? 14:29:54</p>	<p>1 regarding hospitalization. Does that doctor make an 14:31:39  2 observation with respect to Mr. Sumter and hemolysis at the 14:31:46  3 time of his complete contact with that hospital? 14:31:52  4 A. It says "Laboratory tests remain negative for 14:31:55  5 hemolysis. His presenting systems resolved. No evidence of 14:32:00  6 any sequelae." 14:32:05  7 Q. Throughout the time he was there, as far as you can 14:32:06  8 tell, his laboratory tests remain negative for hemolysis? 14:32:09  9 MR. WARD: Object to the form. You haven't shown 14:32:14  10 him all of the records. You just showed him the 14:32:16  11 discharge summary. 14:32:19  12 BY MR. TUCKER: 14:32:20  13 Q. Is that what the doctor said at discharge? 14:32:20  14 A. That's what was there. I would say again, though, 14:32:24  15 you have to understand, you only see where you look. So if 14:32:32  16 they looked at two different times, that doesn't tell you if 14:32:32  17 something happened between. Okay? So it's suggestive but in 14:32:35  18 no means conclusive. 14:32:40  19 Q. Do you know the molecular weight of arsine? 14:32:42  20 A. Not off the top of my head, but I can look it up in 14:32:45  21 a minute. 14:32:50  22 Q. Do you know the density? 14:32:50  23 A. Again, not off the top of my head, but I could look 14:32:51  24 it up. 14:32:54  25 Q. Do you know the relative density to air, its density 14:32:55</p>
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<p>1 A. At one to 2 hours, a couple to 5 ppm. You'd start 14:29:55  2 to be -- I would be concerned about. 14:30:00  3 Q. You would expect that you would see a hemolytic 14:30:01  4 reaction over that period of time? 14:30:07  5 A. You would expect if you adequately sampled that you 14:30:09  6 would start to see some effect, yes, sir. 14:30:13  7 Q. And we didn't see any of that effect in any of these 14:30:15  8 13, did we? 14:30:21  9 A. No, sir, not an acute effect, not where we looked. 14:30:22  10 Q. Well, you remember one of the guys you looked at was 14:30:24  11 a fellow named Sumter? 14:30:30  12 A. Yes, sir. 14:30:35  13 Q. I'm going to hand you his discharge summary from 14:30:36  14 St. Francis Hospital in Tulsa, Oklahoma. And I'll be glad to 14:30:41  15 show them to you if you would like to look at them, but he was 14:30:57  16 tested when he got to the hospital on July 11 at 7:51 in the 14:31:05  17 evening. Remember the incident happened about 1:00? So 14:31:12  18 that's within our 24-hour window, isn't it? 14:31:17  19 A. It is. 14:31:21  20 Q. And he was tested again on July the 12th at 9:00 in 14:31:21  21 the morning. That's still within the 24-hour window, isn't 14:31:26  22 it? 14:31:30  23 A. About 14 hours later. 14:31:30  24 Q. I'm going to hand you the discharge summary from 14:31:31  25 Dr. Brad Smith, and I would like you to look at the section 14:31:35</p>	<p>1 relative to air? 14:33:00  2 A. Generally heavier, yes, sir. 14:33:02  3 Q. Do you know what the decomposition rate is? 14:33:06  4 A. It would be dependent upon temperature. 14:33:09  5 Q. The higher the temperature the faster it decomposes 14:33:13  6 or the other way around? 14:33:17  7 A. The higher the temperature the faster it decomposes. 14:33:19  8 Q. Well, let's say at 100 degrees, how fast would it 14:33:21  9 decompose, 100 degrees Fahrenheit? 14:33:25  10 A. In chemical terms, not a very high temperature. 14:33:26  11 Q. What are the chronic exposures? 14:33:30  12 A. Chronic exposure is exposure over a protracted 14:33:33  13 period of time. Different people sort of break it up. Acute 14:33:40  14 is clearly a single exposure over a few hours. We then talk 14:33:45  15 about -- nowadays we talk about subchronic, up to about three 14:33:54  16 months. Generally, chronic is somewhere beyond three months. 14:34:00  17 Q. Now, whether you call something acute, chronic or 14:34:05  18 subchronic, that doesn't tell you anything about how much you 14:34:12  19 were exposed to? 14:34:15  20 A. Per se, no, sir. 14:34:16  21 Q. So when you talk in terms of whether or not any of 14:34:17  22 these 13 folks had any consequences resulting from a chronic 14:34:21  23 exposure of arsine, what amount of arsine are you referring 14:34:28  24 to? 14:34:32  25 A. Okay. We go back to how much over how long. 14:34:32</p>

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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 11, 2005

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1 Q. All right. I just want to know how much. You said 14:34:39  
 2 chronic means three months, so over a three -- 14:34:43  
 3 A. Over a period of three months. 14:34:47  
 4 Q. How much? 14:34:50  
 5 A. I'm obviously not getting the concept across here. 14:34:53  
 6 One would expect that if you had exposure over three months, 14:35:14  
 7 somewhere above -- and it was, let's say for argument sake, 14:35:21  
 8 it's an industrial situation, so it's roughly eight hours a 14:35:27  
 9 day. Okay? And they had exposure somewhere over the 14:35:30  
 10 permissible exposure level of .05. 14:35:36  
 11 Q. .05 what? 14:35:40  
 12 A. Ppm. Okay? Then if they had three months or six 14:35:43  
 13 months or a year of exposure at somewhere between that and 14:35:49  
 14 1 ppm, and there would be variability from individual to 14:35:57  
 15 individual, then you would see some chronic effects. 14:36:00  
 16 Q. How many parts per billion is .05 ppm? 14:36:05  
 17 A. Fifty ppb. 14:36:10  
 18 Q. Do you have any evidence of any testing of any kind 14:36:20  
 19 that demonstrates a presence of 50 parts per billion in the 14:36:26  
 20 air around the Port of Catoosa? 14:36:33  
 21 A. No, sir. I have no evidence of any continuous 14:36:36  
 22 testing. 14:36:45  
 23 Q. Do you have any evidence of any testing other than 14:36:46  
 24 the day of July 11th, 2001? 14:36:51  
 25 A. Any testing? 14:36:54

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1 A. Again, there would be some variability per 14:40:03  
 2 individual. You could look at the report I did in terms of -- 14:40:06  
 3 and this is the December 30, 2004, document, and I spend about 14:40:32  
 4 a page and a half, single-spaced, defining what you should 14:40:45  
 5 look at for long-term or chronic effects. 14:40:50  
 6 Q. What objective laboratory findings and values would 14:40:53  
 7 you have for someone that you're looking to determine if they 14:40:57  
 8 had any consequences of any chronic exposure to arsine? 14:41:01  
 9 A. Objective laboratory findings, you might have -- 14:41:05  
 10 you've got, again, a whole list of things. You might have 14:41:12  
 11 anything ranging from measurable peripheral neuropathy; an 14:41:17  
 12 increased heart rate; decreased blood pressure; changes in the 14:41:28  
 13 electrocardiogram. Your hematologic effects: Anemia; 14:41:33  
 14 elevated bilirubin, as the fact you're breaking up red blood 14:41:51  
 15 cells; high levels of blood; blood calcium; blood potassium; 14:41:58  
 16 damaged red blood cells; stipple cells, for example; low 14:42:10  
 17 levels of haptoglobin; elevated levels of plasma, preplasma 14:42:16  
 18 hemoglobin, elevated levels of hemoglobin in the urine, 14:42:22  
 19 elevated levels of blood uria nitrogen, creatinine, that is 14:42:26  
 20 elevated -- we call them abnormal liver panel, liver function 14:42:34  
 21 test, parameters of the normal chemical chemistry. 14:42:38  
 22 You might find elevated urine arsenic levels that 14:42:47  
 23 would be coming back out of -- those would be coming back out 14:42:52  
 24 of the system. So those would be your, quote, "measurable" 14:42:56  
 25 laboratory values. 14:43:00

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1 Q. That measures? 14:36:55  
 2 A. What we have is the records that show that you had 14:36:56  
 3 arsine alarms going off at multiple points of time, which 14:37:03  
 4 means there was arsine -- indicates that there was arsine 14:37:11  
 5 present at multiple times other than just the time of 14:37:16  
 6 exposure. Measurements I have not seen, and I think I 14:37:21  
 7 answered this before. I have not seen any measurements. I 14:37:24  
 8 asked about emission levels, release levels and so forth. 14:37:28  
 9 Q. What does IDLH mean? 14:37:34  
 10 A. ID -- 14:37:37  
 11 Q. LH. IDLH. Do you know of a standard of exposure to 14:37:41  
 12 toxic materials that's called the IDLH level? 14:37:48  
 13 A. That's not -- that doesn't ring, sir. 14:37:53  
 14 Q. Do you know the acronym ERBG? 14:37:56  
 15 A. Sorry. Fatigue is starting to sink in now. It 14:38:08  
 16 doesn't come at the moment. 14:38:19  
 17 Q. Do you know the acronym TLV? 14:38:21  
 18 A. Threshold limit value, yes, sir. 14:38:24  
 19 Q. Do you know the TLV for arsine? 14:38:27  
 20 A. Well, there are -- hold on a second. It's .05 ppm. 14:38:34  
 21 Q. And that's the value that you gave me earlier; is 14:39:51  
 22 that correct? 14:39:56  
 23 A. Yes, sir. 14:39:56  
 24 Q. How does a chronic exposure to arsine, if you had 14:39:56  
 25 one, how would that manifest itself? 14:39:59

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1 Q. With respect to any of these 13 folks, did you find 14:43:01  
 2 any anemia? 14:43:07  
 3 A. Well, I'm -- I'm checking to be sure, but I don't 14:43:09  
 4 think, in fact, that there was any frank anemia anywhere. 14:43:36  
 5 Q. What about elevated bilirubin? 14:43:39  
 6 MR. WARD: Object. One question at a time. 14:43:43  
 7 MR. TUCKER: I'm sorry. I thought he finished his 14:43:46  
 8 answer. I apologize. 14:43:48  
 9 MR. WARD: I think he's still looking. 14:43:49  
 10 BY MR. TUCKER: 14:43:45  
 11 Q. I don't want to interrupt you, sir. 14:43:45  
 12 MR. WARD: I thought -- I guess I was wrong. 14:43:55  
 13 A. Mr. Patton was the one person where there was 14:44:30  
 14 anything and that was a reduced hematocrit. 14:44:46  
 15 BY MR. TUCKER: 14:43:45  
 16 Q. Okay. Was that hematocrit still within normal 14:43:45  
 17 limits? 14:44:57  
 18 A. I believe it was reduced outside of the normal 14:44:57  
 19 range, but it wouldn't be clinically significant, no, sir. 14:45:00  
 20 Q. Did your search just now also include looking for 14:45:04  
 21 elevated bilirubin? 14:45:18  
 22 A. No, sir. 14:45:20  
 23 Q. Please look for elevated bilirubin on these folks. 14:45:20  
 24 A. Again, this is just my summary, so in no way is it 14:45:27  
 25 rigorous. 14:45:29

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<p>1 Q. Would I be correct that you would want to include 14:45:29  2 what you thought was important in your summary from the 14:45:33  3 medical records? 14:45:36  4 A. The summary report here would not include 14:45:36  5 everything, no, sir. 14:45:42  6 Q. Well, you wrote two reports? 14:45:44  7 A. Yes, sir. 14:45:47  8 Q. Maybe you put it in the other report? 14:45:47  9 A. No. Only one of those reports in a summary manner 14:45:50  10 speaks to individuals. 14:45:55  11 Q. None of the summaries speak to elevated bilirubin? 14:46:03  12 A. No, sir. 14:46:30  13 Q. Look, then, for red cells that are low, stipple 14:46:31  14 cells, low haptoglobin, high free plasma hemoglobin or 14:46:37  15 hemoglobinuria. See if any of those folks have that. 14:46:45  16 A. Speak them one at a time again. 14:46:47  17 Q. You gave me a long list of blood things. I can give 14:46:49  18 you the list, but I figured since you gave it to me you 14:46:52  19 probably remember it. 14:46:56  20 I'm looking for any of those folks who show any of 14:46:57  21 those laboratory blood values that you identified that you 14:47:01  22 would expect to find problems with in a chronic exposure. 14:47:05  23 MR. WARD: Object to the form. 14:47:10  24 A. And in looking in this particular set - I don't 14:47:12  25 believe that in this particular time frame there were findings 14:47:25</p>	<p>1 you want to have some contemporaneous with an event and then 14:48:53  2 for a long time after to see if you have a chronic exposure 14:48:57  3 reaction, don't you? 14:48:57  4 A. I'm sorry. Say that again, sir. 14:49:00  5 Q. If you think there's a chronic exposure situation, 14:49:01  6 you don't want to be happy with tests just at one point in 14:49:04  7 time, you want to look at tests taken in 2001 and 2002, 14:49:08  8 wouldn't you say? 14:49:13  9 A. Oh, over a long period of time. One of the things 14:49:13  10 I do for people is look at their occupational health record 14:49:17  11 and we do an analysis and look to see if there is any pattern 14:49:24  12 there that says there is an effect. Your most rigorous set of 14:49:29  13 data helps you the best. 14:49:34  14 Q. The testing that was done was done in 2001; July, 14:49:36  15 11, 12, 13, a few days after that? 14:49:43  16 A. Yes, sir. 14:49:43  17 Q. And then the next set of testing that was done that 14:49:43  18 you have is the testing that was done by Dr. Hastings? 14:49:50  19 A. Yes, sir. 14:49:51  20 Q. Which was what, a year later or more? 14:49:51  21 A. Yes, sir. 14:49:54  22 Q. And did either of the data sets for these 13 people, 14:49:55  23 either the ones taken by the hospital in Tulsa in July of 2001 14:50:02  24 or the testing that was done by Dr. Hastings a year later, did 14:50:07  25 any of those data sets show a confirming laboratory value in 14:50:13</p>
Page 122	Page 124
<p>1 that clearly supported any of those. 14:47:38  2 BY MR. TUCKER: 14:43:45  3 Q. When you say "this particular set," does that mean 14:43:45  4 these 13 folks? 14:47:45  5 A. These 13 folks and the data set that I looked at and 14:47:47  6 summarized there. 14:47:51  7 Q. And the time frame was what? 14:47:52  8 A. Shortly after or relative to the time of exposure. 14:47:54  9 I mean, what happens is with several of these individuals, you 14:48:03  10 start to see problems which would confound the laboratory 14:48:08  11 values, those problems might have been due to exposure or it 14:48:13  12 might have been something else. 14:48:17  13 Q. Didn't Dr. Harrison take blood tests also? 14:48:18  14 Dr. Hastings? 14:48:24  15 A. I don't know Dr. Harrison. 14:48:24  16 Q. Dr. Hastings. 14:48:27  17 A. Dr. Hastings did have blood samples, yes. 14:48:28  18 Q. And you reviewed those? 14:48:31  19 A. Yes, sir. 14:48:33  20 Q. And did those blood samples indicate the presence of 14:48:34  21 any of these things that you've talked about here? Those were 14:48:37  22 here -- for the record, those were taken sometime after the 14:48:43  23 event, weren't they? 14:48:46  24 A. Yes, sir, and that's the problem with it. 14:48:48  25 Q. But if we're trying to identify a chronic exposure, 14:48:49</p>	<p>1 this long list of things you told me to look for, like anemia, 14:50:19  2 bilirubin, elevated red blood cells, stipple cells, that kind 14:50:25  3 of thing? 14:50:28  4 A. I don't have -- in those particular measurements of 14:50:28  5 samples that were taken, other than the one reduction in 14:50:33  6 hematocrits and value changes with the one fellow who 14:50:39  7 developed kidney problems, that particular laboratory or 14:50:43  8 laboratory variable list, you don't see, I don't believe in 14:50:48  9 the data that I've seen, that there is anything that indicates 14:50:53  10 those. 14:50:57  11 Q. Do you know of any peer-reviewed literature that 14:50:57  12 says that you can state to a reasonable degree of scientific 14:51:12  13 certainty that a person that's having some sort of an injury 14:51:17  14 as a consequence of exposure to arsine when there is no 14:51:22  15 evidence, that any one of these values is out of line? 14:51:26  16 MR. WARD: Object to the form. 14:51:32  17 A. Say the question again. 14:51:33  18 MR. TUCKER: Could you reread that? 14:51:33  19 THE COURT REPORTER: "Do you know of any 14:52:10  20 peer-reviewed literature that says that you can state 14:51:10  21 to a reasonable degree of scientific certainty that a 14:51:14  22 person that's having some sort of an injury as a 14:51:18  23 consequence of exposure to arsine when there is no 14:51:22  24 evidence, that any one of these values is out of 14:51:26  25 line?" 14:51:31</p>

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SHAYNE GAD

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<p style="text-align: right;">Page 125</p> <p>1 A. No, sir. I am not aware of anything in the 14:52:12</p> <p>2 peer-reviewed literature that addresses that specific 14:52:19</p> <p>3 question. I mean, if you look at the Dart article, for 14:52:30</p> <p>4 example -- it's not an article, it's really a review -- or you 14:52:34</p> <p>5 look at Patty's -- but Dart would be the one you would look at 14:52:39</p> <p>6 the most and reflects the literature -- you'll see that there 14:52:44</p> <p>7 is lots of individual variability in this response. And the 14:52:55</p> <p>8 single indicator, with the possible exception of haptoglobin 14:53:02</p> <p>9 and hemoglobin, et cetera, in and of itself is not sufficient 14:53:10</p> <p>10 to establish exposure. 14:53:14</p> <p>11 On the other hand, you should not expect that you 14:53:17</p> <p>12 would see everything in one individual. You'll get a pattern 14:53:21</p> <p>13 of some things. So you need to look at a gestalt of things. 14:53:25</p> <p>14 BY MR. TUCKER: 14:53:31</p> <p>15 Q. Dr. Gad, would you expect to find a situation where 14:53:31</p> <p>16 you would find nothing, no value was wrong? 14:53:36</p> <p>17 A. No laboratory? 14:53:38</p> <p>18 Q. No laboratory value was off. 14:53:40</p> <p>19 A. You're focusing on, quote, "laboratory values." 14:53:42</p> <p>20 Q. Yes, I am. I'm focusing on objective criteria. 14:53:46</p> <p>21 A. I would quibble with the use of the term "objective 14:53:53</p> <p>22 criteria." 14:53:57</p> <p>23 Q. Let's get straight on the term, then. As I 14:53:58</p> <p>24 understand -- of course, I realize you're not a doctor. But 14:54:01</p> <p>25 as I understand in medicine, you've got objective findings and 14:54:02</p>	<p style="text-align: right;">Page 127</p> <p>1 tend to be the red bloods cells, and over time it's going to 14:55:34</p> <p>2 distribute itself to other tissues and eventually be 14:55:43</p> <p>3 eliminated from the body. 14:55:46</p> <p>4 Q. If you continue to be exposed to arsine at some 14:55:48</p> <p>5 level, that arsine is going to go to those red blood cells and 14:55:52</p> <p>6 cause those red blood cells to react; isn't that right? 14:55:57</p> <p>7 A. You're going to have a steady state in those red 14:56:01</p> <p>8 blood cells. The problem is -- 14:56:06</p> <p>9 Q. And that would be a steady state -- as I understand 14:56:08</p> <p>10 it, that would demonstrate such things as stipple cells, high 14:56:11</p> <p>11 free plasma hemoglobin, low red cells, anemia, elevated 14:56:16</p> <p>12 bilirubin and those kind of things. 14:56:18</p> <p>13 A. If it were high enough, yes, sir. Keep in mind, one 14:56:20</p> <p>14 of the things that happens with the body is it wants to go 14:56:25</p> <p>15 back to or it tends to go back to homeostasis. So the body is 14:56:31</p> <p>16 going to produce more red bloods to make up for any loss. 14:56:40</p> <p>17 In extreme situation, what's going to happen is 14:56:43</p> <p>18 you're going to see -- you'll see a drop, and you'll start to 14:56:46</p> <p>19 see an increase in what's called reticular sites, immature red 14:56:51</p> <p>20 blood cells, to make up for the loss of red blood cells. But 14:56:58</p> <p>21 that's very extreme. 14:57:01</p> <p>22 Q. Well, if it produces more red cells to deal with the 14:57:01</p> <p>23 fact that you're having a constant day-to-day exposure to 14:57:05</p> <p>24 arsine, that's because the red cells exposed to the arsine are 14:57:08</p> <p>25 going to release to hemoglobin; isn't that right? Otherwise, 14:57:13</p>
<p style="text-align: right;">Page 126</p> <p>1 self-reported findings; is that right? You said that in your 14:54:05</p> <p>2 report. 14:54:11</p> <p>3 A. Yes, sir. But objective isn't just laboratory 14:54:11</p> <p>4 values. Objective can be other things. "This person has a 14:54:17</p> <p>5 lot of cough. This person is vomiting." Those are not 14:54:19</p> <p>6 laboratory findings, and yet they're certainly -- they're not 14:54:24</p> <p>7 self-reported and they're certainly, at the same time, 14:54:29</p> <p>8 objective. 14:54:35</p> <p>9 Q. Let me ask this another way. Since you previously 14:54:36</p> <p>10 told me that blood was the primary -- what did you call it? 14:54:39</p> <p>11 A. It would be the primary target organ for acute 14:54:42</p> <p>12 exposure. 14:54:47</p> <p>13 Q. It's kind of the gatekeeper for arsine, isn't it? 14:54:48</p> <p>14 A. For acute exposure to arsine. 14:54:51</p> <p>15 Q. Well, I mean, a little arsine or a lot of arsine is 14:54:54</p> <p>16 all going to love to go to red blood cells, isn't it? 14:54:57</p> <p>17 A. It's going to go to other places also. 14:55:01</p> <p>18 Q. Well, if you have a certain quantity of arsine, a 14:55:04</p> <p>19 certain percentage of it's going to go to red blood cells, 14:55:07</p> <p>20 assuming there's enough red cells available, and a certain 14:55:13</p> <p>21 quantity is going to probably go someplace else; isn't that 14:55:16</p> <p>22 right? 14:55:22</p> <p>23 A. What would happen -- it depends on time. What will 14:55:22</p> <p>24 happen is initially after an exposure, the first place you're 14:55:26</p> <p>25 going to tend to find the arsine and arsine effect is going to 14:55:30</p>	<p style="text-align: right;">Page 128</p> <p>1 you wouldn't need all of those extra red blood cells, would 14:57:19</p> <p>2 you? 14:57:24</p> <p>3 A. But you wouldn't necessarily see it is the problem. 14:57:24</p> <p>4 Q. So it would release the hemoglobin but it wouldn't 14:57:26</p> <p>5 come up in the test; is that right? 14:57:29</p> <p>6 A. You wouldn't necessarily see it, depending on the 14:57:31</p> <p>7 degree of exposure. 14:57:34</p> <p>8 Q. Because there might not be enough there to cause any 14:57:35</p> <p>9 kind of reaction to the blood? 14:57:40</p> <p>10 A. It might not be a sufficient amount to overcome the 14:57:41</p> <p>11 body's ability to make up for it. 14:57:46</p> <p>12 Q. But the arsine is going to cause hemoglobin to 14:57:49</p> <p>13 escape into the plasma; is that right? 14:57:55</p> <p>14 A. Keep in mind, it's not causing hemoglobin to escape. 14:57:57</p> <p>15 It's causing an increased aging, if you will, of red blood 14:58:02</p> <p>16 cells and therefore destruction of them. 14:58:07</p> <p>17 Q. At which point the hemoglobin escapes into the 14:58:09</p> <p>18 plasma? 14:58:12</p> <p>19 A. That causes the release of hemoglobin into the 14:58:13</p> <p>20 plasma. 14:58:16</p> <p>21 Q. And you're telling me you can have arsine affecting 14:58:17</p> <p>22 red blood cells every day sufficient enough to cause this 14:58:22</p> <p>23 personal injury, but it's never going to turn up on a test of 14:58:24</p> <p>24 plasma free hemoglobin levels being high? 14:58:31</p> <p>25 A. I would not say it will never turn up. The problem, 14:58:33</p>

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<p style="text-align: right;">Page 129</p> <p>1 again, is you have a very fractured data set. 14:58:37</p> <p>2 Q. Let me ask it this way: Would it be fair to say, if 14:58:40</p> <p>3 you looked at the man's blood levels and you found hemoglobin 14:58:44</p> <p>4 elevated, that that would tend to support the contention that 14:58:50</p> <p>5 this man is having a dose response to exposure to arsine? 14:58:55</p> <p>6 Would you agree with that? 14:58:59</p> <p>7 A. That would be -- I think I basically said that in an 14:59:01</p> <p>8 earlier question. 14:59:04</p> <p>9 Q. Would you agree that if a man says "I think I'm 14:59:04</p> <p>10 exposed to arsine and I have all of these self-reported 14:59:08</p> <p>11 symptoms about arsine," but you can't find a single 14:59:11</p> <p>12 haptoglobin test that shows that his haptoglobin is low or his 14:59:18</p> <p>13 plasma free hemoglobin is high, wouldn't you agree that there 14:59:23</p> <p>14 really isn't any objective there to support his claim? 14:59:27</p> <p>15 A. If I took enough samples, if I measured somewhat 14:59:32</p> <p>16 rigorously and the person was still in the environment they 14:59:36</p> <p>17 were being exposed, that would cause me to have some doubt 14:59:40</p> <p>18 that there was significant exposure. 14:59:44</p> <p>19 Q. If a person comes in with self-reported symptoms and 14:59:44</p> <p>20 his laboratory values at the time of an acute event and his 14:59:47</p> <p>21 laboratory values a year later following his claims of 14:59:52</p> <p>22 continued chronic exposure are all negative and all he has are 14:59:56</p> <p>23 self-reported symptoms, what on earth would you have to 14:59:59</p> <p>24 support a diagnosis that he had chronic reactions to arsine 15:00:04</p> <p>25 exposure? 15:00:06</p>	<p style="text-align: right;">Page 131</p> <p>1 information, some of these individuals -- I looked at the 13; 15:01:57</p> <p>2 I rendered an opinion on those 13 -- some of them, the weight 15:02:01</p> <p>3 of evidence says, yes, there was a level of exposure to arsine 15:02:06</p> <p>4 or it is likely that there was a level of exposure -- more 15:02:11</p> <p>5 likely than not a level of exposure which would have health 15:02:16</p> <p>6 effects. 15:02:21</p> <p>7 Some of them, on the other hand, I could not reach 15:02:22</p> <p>8 that conclusion. Okay? And if I had a more rigorous medical 15:02:27</p> <p>9 surveillance for the individuals, I might be able to render a 15:02:33</p> <p>10 stronger opinion. 15:02:38</p> <p>11 THE WITNESS: This is really where we get to the 15:02:43</p> <p>12 3:00 conference call. 15:02:45</p> <p>13 MR. TUCKER: Go make your call. 15:02:55</p> <p>14 (A break was taken from 3:02 p.m. to 3:33 p.m.) 15:02:55</p> <p>15 BY MR. TUCKER: 15:11:42</p> <p>16 Q. We talked about the fact that the data set you had 15:29:30</p> <p>17 on these folks was July of 2001 and then not again until 15:33:28</p> <p>18 Dr. Hastings did his blood testing, which was a year or more 15:33:36</p> <p>19 later, depending on the people; is that right? 15:33:39</p> <p>20 A. Yes, sir. 15:33:41</p> <p>21 Q. My recollection is that some of these people, 15:33:41</p> <p>22 isolated instances, there were other testing that were done by 15:33:44</p> <p>23 other places a little bit later; is that right? 15:33:49</p> <p>24 A. Yes, sir. 15:33:51</p> <p>25 Q. And your conclusions, as I understand it, is even 15:33:52</p>
<p style="text-align: right;">Page 130</p> <p>1 A. The problem is that you have a constellation of 15:00:07</p> <p>2 effects, all of which are portions or parts of what you would 15:00:11</p> <p>3 see. The problem with all of this is nobody rigorously tested 15:00:17</p> <p>4 these individuals after the exposure, nobody followed them for 15:00:24</p> <p>5 a period of time to be able to say it didn't happen. All you 15:00:28</p> <p>6 can say is that "At the times we looked, we didn't see." 15:00:34</p> <p>7 THE WITNESS: A little bit of warning, we're about 15:00:42</p> <p>8 two minutes off of 3:00. 15:00:42</p> <p>9 BY MR. TUCKER: 14:51:08</p> <p>10 Q. Isn't kind of what you're saying is it might be, it 15:00:44</p> <p>11 might not be? We just can't tell? 15:00:49</p> <p>12 MR. WARD: Object to the form. 15:00:51</p> <p>13 A. No, sir. I think what I'm saying is or tried to say 15:00:52</p> <p>14 in my report, and that is that if we look at a weight of 15:00:58</p> <p>15 evidence, which is what we frequently do in toxicology -- 15:01:06</p> <p>16 toxicologists do causality, which is not what physicians do. 15:01:10</p> <p>17 Physicians don't do causality. Physicians do diagnoses and 15:01:15</p> <p>18 treatment. Toxicologists do causality. 15:01:20</p> <p>19 Frequently, what we have are incomplete data sets. 15:01:24</p> <p>20 Because unlike laboratory animals where we can say, "Okay, 15:01:28</p> <p>21 we're going to draw blood at one hour, four hours, six hours" 15:01:30</p> <p>22 or whatever, we get these fractured data sets, unless we have 15:01:34</p> <p>23 a good medical surveillance program. And based on the pattern 15:01:38</p> <p>24 -- and in no case because -- let me finish. 15:01:44</p> <p>25 Based on the pattern of signs and symptoms and 15:01:49</p>	<p style="text-align: right;">Page 132</p> <p>1 though none of this laboratory data, none of this blood work 15:33:59</p> <p>2 contains any of the findings you would expect blood to have as 15:34:04</p> <p>3 a reaction to exposure to arsine, but nonetheless you would 15:34:08</p> <p>4 still give the opinions you gave in your two reports; is that 15:34:14</p> <p>5 right? 15:34:20</p> <p>6 MR. WARD: Objection. 15:34:20</p> <p>7 A. I'm sorry. I didn't catch the last few words. 15:34:20</p> <p>8 BY MR. TUCKER: 15:34:20</p> <p>9 Q. Nonetheless, you can still give the opinions that 15:34:20</p> <p>10 you gave in your two reports; is that right? 15:34:24</p> <p>11 A. Yes, sir, on the basis I presented in my report. 15:34:26</p> <p>12 Q. If you had more data sets; two, three, four more 15:34:29</p> <p>13 periods of intervals of time between 2001 and 2002 with blood 15:34:34</p> <p>14 tests, would that have given you enough data sets to give you 15:34:38</p> <p>15 a better answer? 15:34:45</p> <p>16 A. Yes, sir. If there had been an adequate medical 15:34:46</p> <p>17 surveillance, which is the question you're asking, that would 15:34:50</p> <p>18 improve the quality of the answer one way or the other. 15:34:54</p> <p>19 Q. Did you ever discuss that and advise plaintiffs' 15:34:56</p> <p>20 counsel that that's something they ought to do? 15:34:59</p> <p>21 A. At the point I became involved, they had 15:35:02</p> <p>22 Dr. Hastings' information, the measures that had been there. 15:35:05</p> <p>23 And it's at that point 18 months after incident. 15:35:10</p> <p>24 Q. Well, were those people still working at Port of 15:35:14</p> <p>25 Catoosa? 15:35:18</p>

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1 A. Some of them were. Many of them weren't. 15:35:18  
 2 Q. If arsine is in the air then, isn't arsine in the 15:35:20  
 3 air today? 15:35:24  
 4 A. One would assume, yes, sir. 15:35:24  
 5 Q. Why didn't you tell them to go ahead and do some 15:35:26  
 6 more testing? 15:35:30  
 7 A. I wasn't asked for advice on that part, sir. 15:35:30  
 8 Q. So we can't fault the lawyers, is that it? 15:35:34  
 9 MR. WARD: Exactly. 15:35:41  
 10 A. No comment. 15:35:42  
 11 BY MR. TUCKER: 15:35:43  
 12 Q. Do you know what happened to the arsine that escaped 15:35:43  
 13 in July of 2001? 15:35:55  
 14 A. Fatigue is starting to show, not to give you a funny 15:35:57  
 15 answer. 15:36:09  
 16 No, but we can pretty well guess that some of it 15:36:13  
 17 escaped into the atmosphere. And at some point, it was all 15:36:16  
 18 converted to other forms of arsenic. 15:36:21  
 19 Q. Do you know how long that takes? 15:36:24  
 20 A. It depends on the temperature; to some degree on 15:36:27  
 21 humidity. 15:36:29  
 22 Q. Well, we know it was 100 degrees and we know it was 15:36:31  
 23 an Oklahoma day in July which you said has more humidity than 15:36:35  
 24 an El Paso day in July. 15:36:40  
 25 A. There would be more humidity than an El Paso day in 15:36:42

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1 out to the northwest in the direction the wind is blowing. 15:38:07  
 2 Q. Do you know how high in the air that gas would go? 15:38:11  
 3 A. No, sir. I don't think anyone measured, for 15:38:15  
 4 example, wind speed. I have seen nothing that said we did. 15:38:24  
 5 We have weather station reports, but no one measured it there. 15:38:27  
 6 In amongst buildings, it would kind of disperse. 15:38:32  
 7 MR. WARD: Would you read back what he just said? 15:38:49  
 8 MR. TUCKER: I think I object to that as 15:38:49  
 9 nonresponsive. I don't think that's the question I 15:38:53  
 10 asked. 15:38:56  
 11 THE COURT REPORTER: "No, sir. I don't think 15:38:16  
 12 anyone measured, for example, wind speed. I have seen 15:38:22  
 13 nothing that said we did. We have weather station 15:38:26  
 14 reports, but no one measured it there. In amongst 15:38:29  
 15 buildings, it would kind of disperse." 15:38:34  
 16 A. We don't know how high it would have gone because we 15:39:34  
 17 don't know how much wind speed or how much mixing or anything. 15:39:37  
 18 One wouldn't expect it to go very high, no, sir. 15:39:44  
 19 BY MR. TUCKER: 15:39:53  
 20 Q. Now, what happened when the arsine escaped? What's 15:39:53  
 21 the event that was described as the arsine escape? 15:39:53  
 22 A. I've seen two figures. You had a drum tank which 15:39:55  
 23 there was a reaction, explosion, the tank ruptured and the 15:40:07  
 24 arsine was liberated in the surrounding area. 15:40:14  
 25 Q. When you say a "tank," do you mean a gas cylinder? 15:40:19

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1 July, yes, sir. 15:36:43  
 2 Q. So do you have any idea how long before it would 15:36:43  
 3 break down? 15:36:47  
 4 A. I would expect that -- the specific arsine that was 15:36:47  
 5 released from the tank rupture here, it is unlikely that any 15:36:50  
 6 of that continued to exist of gas, certainly not more than 15:37:00  
 7 12 hours and probably less than that. 15:37:04  
 8 Q. When I say "what happened to it," there's another 15:37:06  
 9 way to look at that, and that is: Did it go anywhere from the 15:37:09  
 10 point of escape? Did it go anywhere? 15:37:12  
 11 A. What do you mean by "anywhere"? 15:37:16  
 12 Q. Did it leave the area from which it escaped? Did it 15:37:19  
 13 leave the Air Products facility? 15:37:24  
 14 A. Yes, sir, one would expect that it would. 15:37:26  
 15 Q. But do you know whether it did or not? 15:37:28  
 16 A. No one measured. We don't know. 15:37:31  
 17 Q. Which way did it go? 15:37:33  
 18 A. It would disperse. I'm not an expert in air 15:37:36  
 19 modeling, but I do understand air models. It would disperse 15:37:40  
 20 into the atmosphere. It would tend to form an ellipsoid with 15:37:45  
 21 the longer end in the prevailing wind direction. 15:37:50  
 22 Q. So if the prevailing winds were from the southeast 15:37:55  
 23 to the northwest, which way would you expect this ellipsoid to 15:37:58  
 24 go? 15:38:04  
 25 A. You would get a plume that would be longer and more 15:38:04

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1 A. Yes, sir. 15:40:22  
 2 Q. When that tank failed, do you know what part of the 15:40:23  
 3 tank failed? Did the cylinder itself fail or did the valve 15:40:27  
 4 fail? 15:40:33  
 5 A. We don't know, sir. 15:40:33  
 6 Q. When it failed, was that as a consequence of an 15:40:34  
 7 exothermic reaction? 15:40:41  
 8 A. That may have been, yes, sir. 15:40:43  
 9 Q. What is an exothermic reaction? 15:40:44  
 10 A. That's a reaction which produces heat. 15:40:47  
 11 Q. In fact, you previously studied in one of your 15:40:50  
 12 previous jobs the consequences of exothermic reactions having 15:40:54  
 13 to do with hydrocarbons, didn't you? 15:40:57  
 14 A. Yes, sir. 15:41:01  
 15 Q. Do you know what reactions took place when the 15:41:02  
 16 cylinder or its valve failed, what chemical reactions? 15:41:11  
 17 A. I don't think anyone exactly knows but we can 15:41:17  
 18 hypothesize. 15:41:22  
 19 Q. Would you agree that the arsine would have undergone 15:41:28  
 20 some decomposition? 15:41:32  
 21 A. I would expect there to be some, yes, sir. 15:41:32  
 22 Q. In your report of March 2005, "whether any arsine 15:41:33  
 23 survived this reaction is unknown." Do you still believe 15:41:37  
 24 that? 15:41:41  
 25 A. Yes, sir. No one measured. 15:41:42

34 (Pages 133 to 136)



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<p>1 Q. Was there a time when the emergency responders 15:41:48 2 advised the area was all safe? 15:41:55 3 A. I'm sorry. Say the question, again, sir. 15:41:57 4 Q. Was there a time when the emergency responders that 15:42:03 5 came on July 11th advised that the area was all safe? 15:42:07 6 A. Yes, sir. Clearly, there must have been. 15:42:13 7 Q. Do you know what the basis for that conclusion was? 15:42:16 8 A. No, sir. Other than the fact that there were no 15:42:19 9 indications there was free arsine. 15:42:23 10 Q. Do you know whether or not they measured to see if 15:42:25 11 they had arsine in the air at that time? 15:42:29 12 A. I believe they did, yes, sir. 15:42:30 13 Q. But you don't know the specific basis of their 15:42:33 14 conclusions? 15:42:37 15 A. No, sir, I don't recall at the moment. 15:42:38 16 Q. You said that if a person's having a dose response 15:42:40 17 reaction to something, if the symptoms are significant enough, 15:42:44 18 that would make them go to the doctor? 15:42:50 19 A. Okay. I'm sorry. But the question you asked -- 15:42:52 20 Q. Have you said in previous depositions or reports -- 15:42:55 21 let me rephrase that for you. Have you said that if the 15:42:59 22 symptoms are severe enough, a person will go to the doctor? 15:43:03 23 A. Yes, sir. 15:43:06 24 Q. And is a person with health insurance more likely to 15:43:07 25 go to a doctor more quickly than one without? 15:43:13</p>	<p>1 headaches starting some weeks after the accident?" Where did 15:45:01 2 you get that information? 15:45:05 3 A. It was contained both in Dr. Hastings' reports and 15:45:06 4 in the medical records that were supplied to me. 15:45:10 5 Q. Which did you use to rely upon to write your report 15:45:13 6 on December 30th? 15:45:17 7 A. I, actually at the time, went through all of them. 15:45:18 8 Q. So you did rely, in part, upon Dr. Hastings' 15:45:21 9 findings? 15:45:28 10 A. I did not rely on his conclusions. In fact, I 15:45:28 11 frankly ignored his conclusions. 15:45:36 12 Q. Do you have a copy of your first report handy, 15:45:38 13 December 30, 2004? 15:45:49 14 A. Yes, sir. 15:45:50 15 Q. Why did you ignore Dr. Hastings' conclusions? 15:45:51 16 A. Because my charge and my own ethics require that I 15:46:05 17 reach an independent conclusion, not to look at his. 15:46:09 18 Q. Please look at Mr. Charles Biddle in this report. 15:46:16 19 A. Yes, sir. 15:46:23 20 Q. Was his location at the time of the July 11 event 15:46:24 21 such that an exposure would more than likely have occurred or 15:46:28 22 have not occurred? 15:46:33 23 A. I would have to go back and check it. 15:46:37 24 Q. Do you have those charts that shows where they were? 15:46:43 25 A. I do, yes, sir. 15:46:44</p>
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<p>1 A. It's a societal question. It's generally believed 15:43:16 2 the answer is yes, a person with health insurance is -- has a 15:43:25 3 lower barrier to using healthcare to one that doesn't have. 15:43:33 4 Q. Do you rely on any medical doctor to support your 15:43:36 5 opinions? 15:43:40 6 A. In terms of this, no, sir. 15:43:40 7 Q. Do you rely upon the report and findings of 15:43:42 8 Dr. Hastings? 15:43:46 9 A. No, sir, I did not. 15:43:47 10 Q. Did you rely upon the report and findings of 15:43:48 11 Dr. Hastings when you wrote your report in March of -- or 15:43:57 12 December of 2004? 15:44:05 13 A. I did not base my March report, my conclusions, on 15:44:06 14 Dr. Hastings' report or conclusions or on his conclusions. 15:44:11 15 Q. Well, I haven't finished my question yet. The 15:44:14 16 reason I ask you is because I'm going to ask you next, where 15:44:18 17 did you get the information that you included in your medical 15:44:22 18 summaries in your report of December 30, 2004? 15:44:24 19 A. We have all of those in front of you, behind me. A 15:44:33 20 portion was the information -- I believe we already discussed 15:44:39 21 this -- the information that was bundled with Dr. Hastings' 15:44:43 22 report, the medical facility reports on the individuals that 15:44:48 23 were provided to me. 15:44:51 24 Q. What about the reports, the self-reported symptoms 15:44:52 25 of these people? For example, "Mr. Biddle reports having 15:44:56</p>	<p>1 Q. Where was Mr. Biddle's location? 15:48:01 2 A. Mr. Biddle's location was Building 18 on this 15:48:07 3 particular site, on this particular chart. 15:48:15 4 Q. What is the name of that building? 15:48:19 5 A. Eighteen is a GEA Engine Cooling Systems. 15:48:22 6 Q. What direction is that from Solkotronic? 15:48:26 7 A. And that is the northeast. 15:48:30 8 Q. And how far away? 15:48:34 9 A. Again, there is no exact scale, but judging from 15:48:36 10 this, probably in the range of a hundred yards or less. It's 15:48:44 11 across Skiatook Road and plat from there, up on the, quote, 15:48:55 12 Main Parkway. 15:49:02 13 Q. You're kind of guessing at the distance, aren't you, 15:49:03 14 sir? 15:49:08 15 A. As I said, I don't have a scale on this, sir. 15:49:08 16 Q. Did you read Dr. White's report? 15:49:11 17 A. Yes, sir. 15:49:15 18 Q. Did Dr. White appear to you to be a fairly qualified 15:49:16 19 meteorologist? 15:49:21 20 MR. WARD: Object to the form. 15:49:23 21 A. Yes, sir. From what I had here, that is accurate. 15:49:25 22 He is -- unlike the other gentleman, who is really a 15:49:47 23 geologist, this fellow was trained as a meteorologist, yes, 15:49:50 24 sir. 15:49:50 25 15:49:50</p>

35 (Pages 137 to 140)



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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 11, 2005

<p style="text-align: right;">Page 141</p> <p>1 BY MR. TUCKER: 15:49:54</p> <p>2 Q. Did Dr. White reach a conclusion as to the general 15:49:54</p> <p>3 direction of the winds that day? 15:49:58</p> <p>4 A. Yes, sir. 15:50:00</p> <p>5 Q. What was the general direction he found there? 15:50:25</p> <p>6 A. Generally to the northwest and north. 15:50:27</p> <p>7 Q. Let me hand you what's been previously marked in 15:50:40</p> <p>8 another circumstance. It's Ingram 55149 and also Plaintiffs' 15:50:44</p> <p>9 Exhibit 72 which was an original plaintiffs' exhibit. This 15:50:52</p> <p>10 was provided as the weather for the area. I've taken the 15:50:56</p> <p>11 liberty of marking with a pencil about the time that this 15:51:03</p> <p>12 action occurred on July 11. Do you see that? 15:51:08</p> <p>13 A. Yes, sir. 15:51:13</p> <p>14 Q. What does that record reflect as to the direction 15:51:21</p> <p>15 and speed of the wind? 15:51:25</p> <p>16 A. It says at the point this was measured that the 15:51:27</p> <p>17 speed during this period of time, between 10:53 in the morning 15:51:35</p> <p>18 and 16:53 -- so we ought to tighten that and, instead, go from 15:51:41</p> <p>19 the 12:53, since this happened at 1:00, and say 16:53 -- the 15:51:48</p> <p>20 speed varied from 9 or 8 to 11 knots. 15:51:53</p> <p>21 Q. In what direction? 15:51:57</p> <p>22 A. And would be from 140 to 180. 15:52:00</p> <p>23 Q. Is that pretty much in the southeast-to-northwest 15:52:23</p> <p>24 direction? 15:52:27</p> <p>25 A. Well, it's all down at this end of the rows. 15:52:27</p>	<p style="text-align: right;">Page 143</p> <p>1 Q. What difference would it make? 15:56:40</p> <p>2 A. Well, you would want to know if the bay doors are 15:56:43</p> <p>3 open and if you're just doing free-flowing circulation. If 15:56:46</p> <p>4 you haven't got a free-handling air system, one would assume 15:56:54</p> <p>5 primary air movement would be through those bay doors. 15:57:00</p> <p>6 Obviously, in that situation, if they're facing actually the 15:57:03</p> <p>7 site of the rupture, that would increase the exposure. 15:57:09</p> <p>8 Q. If Mr. Biddle is located to the northeast of the 15:57:13</p> <p>9 site of the accident and the winds are going northwest of the 15:57:18</p> <p>10 accident -- 15:57:22</p> <p>11 MR. WARD: Object to the form. 15:57:22</p> <p>12 BY MR. TUCKER: 15:57:43</p> <p>13 Q. -- doesn't that make it kind of difficult for 15:57:43</p> <p>14 Mr. Biddle to receive any exposure to the arsine? 15:57:46</p> <p>15 MR. WARD: Object to the form. He's never 15:57:50</p> <p>16 testified. There is no evidence to support the 15:57:51</p> <p>17 conclusion that the wind blew only northeasterly. 15:57:53</p> <p>18 A. I'm sorry. Re-ask your question. 15:57:59</p> <p>19 BY MR. TUCKER: 15:58:01</p> <p>20 Q. Sure. If Mr. Biddle is located northeast of the 15:58:01</p> <p>21 site of the accident and the weather information is that the 15:58:04</p> <p>22 wind was going to the northwest, there's not much of a chance 15:58:09</p> <p>23 for Mr. Biddle to be exposed to whatever came out of that 15:58:12</p> <p>24 incident, is there? 15:58:17</p> <p>25 MR. WARD: Object to the form of the question. 15:58:22</p>
<p style="text-align: right;">Page 142</p> <p>1 Q. In the southeast corner of the quadrant? 15:52:32</p> <p>2 A. Yes, sir. 15:52:36</p> <p>3 Q. Was Mr. Biddle working inside or outside of his 15:52:37</p> <p>4 workplace? 15:52:41</p> <p>5 A. I would have to relook at the record on it. I 15:52:42</p> <p>6 think -- I would just have to relook at it. I could do that 15:52:46</p> <p>7 if you wanted. 15:52:53</p> <p>8 Q. Do you know what his job was? 15:52:54</p> <p>9 A. Again, I would have to reconfirm that by looking at 15:52:56</p> <p>10 the records. 15:52:59</p> <p>11 Q. What record would you look at? 15:52:59</p> <p>12 A. I would look at the information -- that was one of 15:53:02</p> <p>13 the things I would get from Mr. Hastings' or Dr. Hastings' 15:53:06</p> <p>14 report because it would be included in there what his 15:53:13</p> <p>15 occupation was at the time. 15:53:15</p> <p>16 Q. Any other places that you would look for it? 15:53:15</p> <p>17 A. No, sir, not that I recollect now. 15:53:18</p> <p>18 Q. Would you look at Dr. Hastings' report for me? 15:53:25</p> <p>19 A. Okay. "Working inside with the bay doors open." 15:53:28</p> <p>20 Q. Do you know which side of the building the bay doors 15:56:28</p> <p>21 are located on? 15:56:33</p> <p>22 A. No, sir. This is one reason I would have to look at 15:56:34</p> <p>23 the site. 15:56:37</p> <p>24 Q. Would it make a difference? 15:56:37</p> <p>25 A. Yes. 15:56:39</p>	<p style="text-align: right;">Page 144</p> <p>1 A. If the wind -- if Mr. Biddle, in fact, according to 15:57:59</p> <p>2 the information I have, was located to the northeast of where 15:58:03</p> <p>3 the point source of exposure occurred, if the wind was 15:58:09</p> <p>4 primarily then to the northwest, approximately 90 degrees off 15:58:14</p> <p>5 from that, one would expect from 7 to 11 knots of wind, 15:58:21</p> <p>6 somewhere in that range, one would expect that that would 15:58:32</p> <p>7 reduce the amount of exposure that may have occurred. 15:58:35</p> <p>8 BY MR. TUCKER: 15:58:38</p> <p>9 Q. Would it even make it possible for him to have had 15:58:38</p> <p>10 any exposure? 15:58:44</p> <p>11 MR. WARD: Object to the form. 15:58:44</p> <p>12 A. I'm sorry, sir? 15:58:44</p> <p>13 BY MR. TUCKER: 15:58:48</p> <p>14 Q. Is it possible he could have even had exposure? 15:58:48</p> <p>15 A. Yes, sir. 15:58:49</p> <p>16 Q. Is it probable that he had exposure? 15:58:50</p> <p>17 MR. WARD: Object to the form. 15:58:53</p> <p>18 A. Exposure in the sense that I'm going to answer you, 15:58:54</p> <p>19 yes, it's quite possible that he may or that it's possible 15:58:59</p> <p>20 that he would have had exposure. Keep in mind, the way you 15:59:03</p> <p>21 asked it, exposure doesn't set a quantity limit. 15:59:08</p> <p>22 BY MR. TUCKER: 15:59:12</p> <p>23 Q. All right. Of a quantity of any consequence to his 15:59:12</p> <p>24 health? 15:59:17</p> <p>25 A. Restate your question, sir. 15:59:18</p>

36 (Pages 141 to 144)



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1 MR. TUCKER: Will you reread the question? 15:59:18  
 2 THE COURT REPORTER: "Of a quantity of any 15:59:13  
 3 consequence to his health?" 15:59:16  
 4 A. Possible. Don't know. Again, no measurements. 16:00:06  
 5 BY MR. TUCKER: 16:00:09  
 6 Q. Well, let's look at your report of December 30th 16:00:09  
 7 with respect to Mr. Biddle. 16:00:13  
 8 A. Yes, sir. 16:00:16  
 9 Q. Did you reach a conclusion with respect to 16:00:16  
 10 Mr. Biddle at that time? 16:00:25  
 11 A. Yes, sir, I did. 16:00:26  
 12 Q. What was that conclusion? 16:00:28  
 13 A. That conclusion was — and, again, I go back to 16:00:29  
 14 weight of evidence. I've answered your questions in terms of 16:00:34  
 15 certitude. But in the weight of evidence for Mr. Biddle, I 16:00:39  
 16 cannot therefore render any opinion to any of his currently 16:00:43  
 17 self-reported medical issues being related to arsine exposure 16:00:48  
 18 at the time of the accident. 16:00:52  
 19 Q. In fact, don't you say in your report that one of 16:00:53  
 20 the questions you ask is and one of the things you told us 16:00:55  
 21 earlier today is you ask "Is there a record of the individual 16:00:58  
 22 being decontaminated, examined or treated on the day of the 16:01:01  
 23 accident?" 16:01:05  
 24 A. Yes, sir. 16:01:05  
 25 Q. We know Mr. Biddle did not seek treatment — 16:01:06

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1 Q. And that's to the northwest, isn't it? 16:04:20  
 2 A. Yes, sir, that's to the northwest about 45 degrees. 16:04:23  
 3 Q. Based on all of the data we have and based on the 16:04:27  
 4 meteorologist's report, that's the direction the wind was 16:04:30  
 5 blowing, isn't it? 16:04:33  
 6 A. Yes, sir. That would be the predominant wind 16:04:34  
 7 direction, yes, sir. 16:04:57  
 8 Q. How long would it take at those wind speeds, if you 16:04:59  
 9 have an opinion, for any arsine that was released to pass by 16:05:04  
 10 at any given point 500 yards away? 16:05:08  
 11 MR. WARD: Are you talking about one molecule 16:05:17  
 12 passing by, entirely by the entire length of — 16:05:19  
 13 BY MR. TUCKER: 16:05:22  
 14 Q. Let me put it this way: If the escape is — if the 16:05:22  
 15 greatest bulk of the escape was supposed to have occurred 16:05:29  
 16 within the first two minutes with only a small amount coming 16:05:32  
 17 out after that up to a half hour, given a point northwest 500 16:05:36  
 18 yards, how long would it take for any significant amount of 16:05:41  
 19 arsine to go by, if there were any at all? 16:05:45  
 20 MR. WARD: Object to the form. 16:05:48  
 21 A. One would have to look at the, in a very rough 16:05:49  
 22 sense, model of what's going on in terms of wind speed, in 16:05:59  
 23 terms of the building structures and such, how much they would 16:06:03  
 24 serve to retard dispersion. The stuff is not leaving the — 16:06:08  
 25 it's not going very high in the air because of its density, 16:06:13

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1 A. There are no medical reports or clinical data 16:01:06  
 2 objectively supporting Mr. Biddle having had significant acute 16:01:08  
 3 exposure. Mr. Biddle was one of the individuals that, in my 16:01:12  
 4 report and in my analysis based on weight of evidence, I did 16:01:16  
 5 not feel was likely to have a causative connection. 16:01:20  
 6 Q. Is that still true today? 16:01:24  
 7 A. Yes, sir. From the information I have right now, 16:01:25  
 8 yes, sir. And all of the information I've seen to this point. 16:01:30  
 9 Q. The next guy on the list is Javier Cardenas. 16:01:34  
 10 A. Yes, sir. 16:01:49  
 11 Q. Let me ask you a little bit more about Mr. Biddle 16:02:01  
 12 before we go away. Do you have any opinion as to his 16:02:04  
 13 currently self-reported medical issues being related to arsine 16:02:10  
 14 exposure at any time? 16:02:14  
 15 A. At any time. I guess I would have to say I have not 16:02:18  
 16 looked at it on that basis and therefore do not render an 16:02:39  
 17 opinion. I have nothing to support or deny. I would have 16:02:44  
 18 to — I'd look at this and make an evaluation based on a 16:02:48  
 19 specific framed question, and I didn't do that, so -- 16:02:53  
 20 Q. Look at Mr. Cardenas, then, sir. Was his location 16:02:57  
 21 at the time of the event on July 11th such that his exposure 16:03:09  
 22 would or would not more likely have occurred? 16:03:12  
 23 A. Yes, sir. 16:03:17  
 24 Q. Was he at X-Changers? 16:04:12  
 25 A. Yes, sir. 16:04:19

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1 one would expect. And there's not enough wind speed to cause 16:06:18  
 2 a great degree of dispersion into the upper atmosphere. 16:06:22  
 3 So I would expect that for that kind of distance -- 16:06:27  
 4 and I would have to look at it. Again, I really want to look 16:06:32  
 5 at the location and such. But one would expect somewhere 16:06:37  
 6 around half an hour, an hour at the most, if you had some 16:06:42  
 7 degree of mixing and retardation against wind dispersion. 16:06:47  
 8 BY MR. TUCKER: 16:06:52  
 9 Q. Well, let me make it about a simple analogy that I 16:06:52  
 10 can think of. Let's say that we have a little kid standing 16:06:53  
 11 there with a machine that blows bubbles -- 16:06:56  
 12 MR. WARD: Objection. This is arsine, not 16:06:59  
 13 bubbles. 16:06:59  
 14 BY MR. TUCKER: 16:07:00  
 15 Q. — and those bubbles are released by this machine 16:07:00  
 16 for two minutes and they're released into this wind that we've 16:07:05  
 17 seen goes from 7 to 11 miles an hour to the northwest; let's 16:07:10  
 18 say every one of those bubbles went in a straight line to the 16:07:16  
 19 northwest and you're standing there and when the first bubble 16:07:19  
 20 gets to you you hit the stopwatch and when the last bubble 16:07:23  
 21 leaves you hit the watch. How long is it going to take for 16:07:28  
 22 that line of bubbles to go past you? 16:07:31  
 23 MR. WARD: Objection to the form of the question. 16:07:34  
 24 That involves mathematical issues that aren't 16:07:36  
 25 established in this case. 16:07:39

37 (Pages 145 to 148)



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1 A. Okay. In your hypothetical of bubbles blown out of 16:07:42  
 2 a machine, one would expect that most of them would go by — 16:07:50  
 3 let's say it's 10 miles an hour. Okay? Ten miles an hour or 16:07:57  
 4 ten times 5000 feet or 5200. So you've got about 52,000 feet 16:08:05  
 5 in an hour that those bubbles would move. So you simply have 16:08:18  
 6 to -- and then we're going to get to an asterisk, meaning 16:08:22  
 7 we're going to come back to it. 16:08:29  
 8 One could then -- 500 feet, in what portion of an 16:08:31  
 9 hour does that represent over 52,000? Well, approximately 16:08:37  
 10 100th; for all practical purposes, a hundred and a fourth. So 16:08:43  
 11 a minute or so. 16:08:48  
 12 So let's go back to our asterisk. The problem is, 16:08:49  
 13 of course, that assumes the bubbles go into the air and you 16:08:54  
 14 have exactly a horizontal wind, but there is nothing -- no 16:08:58  
 15 eddies, no swirls. There's nothing in terms of cover which 16:09:02  
 16 tends to disperse the air or in your case of the hypothetical, 16:09:08  
 17 causing them to break up which, of course, leaves bubble film 16:09:13  
 18 all over the place and it's going to be around longer. 16:09:17  
 19 But if you instantaneously or basically point 16:09:20  
 20 sourced it in two minutes and it was simply a matter of wind 16:09:24  
 21 dispersion in one direction without anything to complicate it, 16:09:28  
 22 then you're looking in a couple of minutes at the most 16:09:33  
 23 before -- on top of the two minutes at over which you're 16:09:38  
 24 emitting the source, so maybe four to five minutes. 16:09:42  
 25 16:09:42

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1 Q. You talked about this ellipsoidal plume that's the 16:11:01  
 2 narrowest point in the area where the accident occurred and 16:11:05  
 3 gets wider as it goes out. Is that because it's becoming 16:11:09  
 4 diluted and spreading out? 16:11:12  
 5 A. It becomes diluted, yes, sir. And it's more and 16:11:15  
 6 more diluted. The reason you get an ellipsoid is as it gets 16:11:18  
 7 further out and it's more diluted, it's actually -- because of 16:11:23  
 8 the concentration you can measure appears to narrow in, and 16:11:27  
 9 that's simply because it's so disperse outside of that. 16:11:31  
 10 Q. So going back to my cat analogy, that means all of 16:11:33  
 11 the cats wouldn't run past you to the northwest? At one given 16:11:37  
 12 point, some of them would run behind you and you would miss 16:11:41  
 13 them, right? 16:11:44  
 14 A. Yes, sir. 16:11:45  
 15 Q. So you wouldn't be exposed to as many cats for that 16:11:45  
 16 two minutes as if they all ran in a straight line, correct? 16:11:49  
 17 MR. WARD: Line? I guess I should object to that 16:11:57  
 18 too, since it doesn't have to do with cat exposure. 16:12:01  
 19 A. Yes, sir, you would expect that the average cat 16:12:05  
 20 density would be reduced. 16:12:09  
 21 BY MR. TUCKER: 16:12:09  
 22 Q. That's my point. Now, if that assumes that we know 16:12:11  
 23 that any arsine survived that exothermic reaction, which is 16:12:11  
 24 basically a fire, isn't it? 16:12:17  
 25 A. No, that is not a fire. 16:12:17

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1 BY MR. TUCKER: 16:09:46  
 2 Q. So if -- 16:09:46  
 3 A. It's more complex than that. 16:09:48  
 4 Q. I don't want to make it complex. Let's make it 16:09:50  
 5 easier. Let's say I've got a great big sack of cats at the 16:09:53  
 6 Solkatronics plant and I start letting cats out at 1:00 in the 16:09:59  
 7 afternoon and they all run northwest between 7 to 10 miles per 16:10:04  
 8 hour, and I let cats out of the sack for two minutes until I 16:10:10  
 9 run out of cats and I'm standing out at the northwest at a 16:10:11  
 10 given point. How long would it take before all of the cats 16:10:14  
 11 run by, from the first time the first cat gets there and the 16:10:17  
 12 last cat leaves? 16:10:20  
 13 MR. WARD: Object to the form of question. 16:10:22  
 14 A. I, first of all, question your experience with cats. 16:10:24  
 15 But that aside, if over two minutes, one would expect from two 16:10:28  
 16 to four minutes, if you were able to get a herd of cats all to 16:10:35  
 17 run at one direction at a constant speed. 16:10:40  
 18 BY MR. TUCKER: 16:10:43  
 19 Q. That's how long it would take them to pass that 16:10:43  
 20 point; is that right? 16:10:46  
 21 A. Yes, sir. 16:10:47  
 22 Q. As I understand, you have not attempted to calculate 16:10:47  
 23 or model any of this; is that right? 16:10:51  
 24 A. That's correct, sir. Other than looking at where 16:10:53  
 25 they were and the wind pattern and such. 16:10:57

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1 Q. It's a heat-releasing action? 16:12:19  
 2 A. Yes, sir, that's correct. The fire implies that you 16:12:21  
 3 also have oxidation-consuming oxygen and such, and that's not 16:12:25  
 4 an exothermic reaction. 16:12:30  
 5 Q. Well, we don't know for sure if any of the arsine 16:12:32  
 6 survived that exothermic reaction, do we? 16:12:36  
 7 A. No one measured, that is correct. 16:12:40  
 8 Q. Your next question was: Is there a record of the 16:12:42  
 9 individual being decontaminated or treated on the day of the 16:12:46  
 10 accident? Did Mr. Cardenas get examined on the day? 16:12:52  
 11 A. There are both records of his decontamination and 16:12:57  
 12 treatment on the day of the accident. 16:13:02  
 13 Q. What records are those? 16:13:03  
 14 A. That would be, in the case of Mr. Cardenas, embedded 16:13:05  
 15 mostly -- the source was embedded in Dr. Hastings' report and 16:13:10  
 16 possibly emergency data. I would have to look at it. 16:13:22  
 17 Q. Do you know what Mr. Cardenas' complaints were when 16:13:22  
 18 he got to the hospital? 16:13:29  
 19 A. No, sir, I don't recollect. I would have to look at 16:13:31  
 20 it. 16:13:36  
 21 Q. I would be more than happy to have you do it. But 16:13:36  
 22 let me tell you the complaints were that he was a little weak 16:13:40  
 23 from standing out in the hot sun for 2 hours. 16:13:44  
 24 BY MR. WARD: Object to the form. 16:13:47  
 25 16:13:47

38 (Pages 149 to 152)



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<p style="text-align: right;">Page 153</p> <p>1 BY MR. TUCKER: 16:13:48</p> <p>2 Q. Do you know of any other complaints he made of any 16:13:48</p> <p>3 physical problems? 16:13:51</p> <p>4 A. Again, I wouldn't recollect. I would have to look 16:13:52</p> <p>5 at the data. 16:13:57</p> <p>6 Q. Were the records of decontamination and treatment 16:14:00</p> <p>7 important to your opinion? 16:14:04</p> <p>8 A. Yes, sir, where they existed. 16:14:05</p> <p>9 Q. I'm going to hand you for reference Page 1 of the 16:14:07</p> <p>10 history and physical resulting from Mr. Cardenas' presentation 16:14:17</p> <p>11 at the Tulsa Regional Medical Center and ask you to look and 16:14:27</p> <p>12 see if it refers to the plaintiff's only complaint. 16:14:34</p> <p>13 MR. WARD: I'm going to object to him answering 16:14:37</p> <p>14 any questions on anything less than a complete report. 16:14:42</p> <p>15 MR. TUCKER: He's free to look at any part of his 16:14:45</p> <p>16 file he wants to look at. 16:14:48</p> <p>17 MR. WARD: That's not established as part of his 16:14:48</p> <p>18 file. 16:14:52</p> <p>19 BY MR. TUCKER: 16:14:52</p> <p>20 Q. Let me ask you this: Look at this and tell me, have 16:14:52</p> <p>21 you ever seen this before? This is history and physical, 16:14:53</p> <p>22 Tulsa Regional Medical Center, Mr. Cardenas, admission date 16:14:56</p> <p>23 7/12/01. 16:15:01</p> <p>24 A. Again, I wouldn't precisely recollect, but I would 16:15:02</p> <p>25 presume I have, yes, sir. 16:15:07</p>	<p style="text-align: right;">Page 155</p> <p>1 have been done; particularly with anybody that was admitted 16:16:37</p> <p>2 into an emergency room. 16:16:43</p> <p>3 Q. What they found was blood in his urine, but they 16:16:47</p> <p>4 never did the confirming test to determine whether it was 16:16:51</p> <p>5 hemoglobin or just blood cells, did they? 16:16:55</p> <p>6 A. No, sir. They simply -- that's right, no one 16:16:57</p> <p>7 looked. 16:17:03</p> <p>8 Q. And because no one looked, it is scientifically 16:17:03</p> <p>9 correct to say that there is no scientific evidence, based on 16:17:11</p> <p>10 the page you just read, that tells you that this man had 16:17:15</p> <p>11 hemoglobinuria as opposed to simply red blood cells in his 16:17:20</p> <p>12 urine from whatever cause; is that correct? 16:17:25</p> <p>13 A. No, sir. In fact, because of what I just read, you 16:17:28</p> <p>14 have information that says that, in fact, he did have 16:17:36</p> <p>15 something causing blood in his urine, he did have something 16:17:41</p> <p>16 causing blood protein hemoglobin in the urine, and more 16:17:44</p> <p>17 measurements to try to differentiate that diagnosis would have 16:17:49</p> <p>18 had to be done. You can't dismiss it because you didn't look 16:17:54</p> <p>19 and didn't see. 16:17:59</p> <p>20 Q. I'm not saying you can dismiss it; but are you 16:18:00</p> <p>21 saying you could prove it when you didn't look and didn't see? 16:18:03</p> <p>22 MR. WARD: Objection. 16:18:07</p> <p>23 A. No, sir. 16:18:07</p> <p>24 MR. WARD: By preponderance of the evidence. If 16:18:09</p> <p>25 that's what you mean by proving. 16:18:13</p>
<p style="text-align: right;">Page 154</p> <p>1 MR. WARD: I still renew my objection that you're 16:15:08</p> <p>2 asking him questions that are based on incomplete 16:15:14</p> <p>3 documentation. 16:15:14</p> <p>4 MR. TUCKER: I understand your objection. 16:15:15</p> <p>5 BY MR. TUCKER: 16:15:19</p> <p>6 Q. What was the patient's complaint? 16:15:19</p> <p>7 A. Let me read the paragraph. "The patient's only 16:15:22</p> <p>8 complaint yesterday was feeling a little weak after being out 16:15:28</p> <p>9 in the hot sun for approximately 2 hours. When the patient 16:15:32</p> <p>10 was seen at the emergency room here at the Tulsa Regional 16:15:35</p> <p>11 Medical Center they found he had 1 plus blood in the urine by 16:15:39</p> <p>12 urinalysis and 2 plus blood trace protein by urine dipstick. 16:15:42</p> <p>13 Secondary to this, patient was admitted for observation. 16:15:45</p> <p>14 Patient denies any weakness today. Feels fine." 16:15:49</p> <p>15 Q. So his only complaint was what? 16:15:52</p> <p>16 A. His only complaint in this case was, in fact, 16:15:55</p> <p>17 weakness. But in his case, you also -- you put it in front of 16:15:58</p> <p>18 me, so -- but in his case, you also do have laboratory data 16:16:06</p> <p>19 that, in fact, suggests that it's consistent with arsine 16:16:10</p> <p>20 exposure. 16:16:15</p> <p>21 Q. Now, if you're going to make a diagnosis of arsine 16:16:16</p> <p>22 exposure, you don't want to just stop at that dipstick test, 16:16:21</p> <p>23 do you? The dip stick test doesn't do it, does it? 16:16:26</p> <p>24 A. No, sir. Properly done, which was not by and large 16:16:26</p> <p>25 done with these individuals, fairly extensive workup would 16:16:30</p>	<p style="text-align: right;">Page 156</p> <p>1 MR. TUCKER: I mean by reasonable degree of 16:18:15</p> <p>2 scientific certainty. 16:18:17</p> <p>3 MR. WARD: You can ask him that way. 16:18:19</p> <p>4 MR. TUCKER: That's what I did. 16:18:21</p> <p>5 (Off the record from 4:18 p.m. to 4:20 p.m.) 16:18:21</p> <p>6 BY MR. TUCKER: 16:20:07</p> <p>7 Q. I'm going to hand you a portion of the discharge 16:20:07</p> <p>8 summary for Mr. Cardenas. Does the doctor report on blood 16:20:20</p> <p>9 findings on Mr. Cardenas during his time at the hospital? 16:20:27</p> <p>10 A. Yes, sir. 16:20:33</p> <p>11 Q. And what are those findings? 16:20:50</p> <p>12 A. "His hemoglobin remained good with initial 16:21:04</p> <p>13 hemoglobin -- hematocrit at 16.7 grams per 100 ml and 16:21:17</p> <p>14 hematocrit of 48.4, which had dropped as expected after IV 16:21:24</p> <p>15 hydration to 14.9 and 44.3." Okay. 16:21:28</p> <p>16 Q. Is that all normal? 16:21:33</p> <p>17 A. That is all -- those are all within normal range, 16:21:34</p> <p>18 yes, sir. 16:21:39</p> <p>19 Q. In the history of the present illness, does the 16:21:39</p> <p>20 doctor say what Mr. Cardenas reported was his complaint by the 16:21:42</p> <p>21 time he got to the hospital? 16:21:46</p> <p>22 MR. WARD: We already covered that one. 16:21:48</p> <p>23 MR. TUCKER: No, I haven't. 16:21:51</p> <p>24 A. Actually, history of present illness. "Felt well 16:21:55</p> <p>25 and had no complaints, however urinalysis revealed 1 plus 16:22:05</p>

39 (Pages 153 to 156)



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1 blood on dipstick." 16:22:12  
 2 BY MR. TUCKER: 16:22:34  
 3 Q. Did you determine whether there was any follow-up of 16:22:34  
 4 the patient's blood in his urine? 16:22:36  
 5 A. I saw no indication that anyone did any further 16:22:44  
 6 testing. But, again, I would have to refresh myself with the 16:22:51  
 7 details. 16:22:53  
 8 Q. In Dr. Hastings' report, he includes with regard to 16:22:53  
 9 Mr. Cardenas that "The patient's urinalysis" - we don't know 16:23:00  
 10 exactly when this was, but "The patient's urinalysis did not 16:23:05  
 11 reveal evidence of hemoglobin in the urine." 16:23:07  
 12 That hemoglobin in the urine is what we're looking 16:23:10  
 13 for as an indicia, an exposure to arsine, and not just blood 16:23:14  
 14 in the urine; isn't that right? 16:23:21  
 15 MR. WARD: Object to the form. 16:23:22  
 16 A. I wouldn't remember what Dr. Hastings - 16:23:23  
 17 Dr. Hastings included that? 16:23:23  
 18 BY MR. TUCKER: 16:23:25  
 19 Q. Yes. I'm just saying he said that. It says, 16:23:25  
 20 "Patient's urinalysis did not reveal evidence of hemoglobin in 16:23:28  
 21 the urine." We don't know what time he's referring to because 16:23:30  
 22 he doesn't say, but I'm just confirming that when you're 16:23:33  
 23 trying to find confirming - objective confirmation of 16:23:36  
 24 exposure to arsine and consequences of exposure to arsine, 16:23:40  
 25 what you look for in the urine is hemoglobin, not red blood 16:23:43

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1 something like garlic, are bound. 16:25:25  
 2 BY MR. TUCKER: 16:25:27  
 3 Q. Do you know of any peer-reviewed literature that 16:25:27  
 4 refers to the sensory detection of arsine as taste rather than 16:25:30  
 5 smell? 16:25:39  
 6 A. No. We usually speak of taste or we usually speak 16:25:44  
 7 of smell. But -- 16:25:53  
 8 Q. Are you aware that at the scene announcements were 16:25:55  
 9 made about the fact that "You might have been exposed to 16:26:00  
 10 arsine if you think you were around garlic or smelled garlic"? 16:26:03  
 11 MR. WARD: Object to the form. 16:26:08  
 12 A. I don't recollect. 16:26:09  
 13 THE WITNESS: I've got to deal with one set of 16:26:13  
 14 questions here, folks. 16:26:15  
 15 A. No, sir, I don't recollect that piece of 16:26:16  
 16 information. 16:26:20  
 17 BY MR. TUCKER: 15:35:43  
 18 Q. Well, I would like you to assume that announcements 15:35:43  
 19 were made to these folks, including Mr. Cardenas, that one of 16:26:25  
 20 the things that they might have noticed would have been the 16:26:29  
 21 smell of garlic; "If you smelled garlic, you should go to the 16:26:33  
 22 hospital." 16:26:43  
 23 A. Okay. I've got that assumption. 16:26:44  
 24 Q. Is there such a thing, particularly in a large group 16:26:47  
 25 like that, listening to a story like that when there is a lot 16:26:57

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1 cells? 16:23:48  
 2 A. Yes, sir. What you're really concerned about is 16:23:48  
 3 hemoglobin, that is correct. 16:23:52  
 4 Q. Because if you find red blood cells in there, they 16:23:53  
 5 obviously haven't ruptured, right, or you wouldn't find the 16:23:56  
 6 whole cell? 16:24:01  
 7 A. That's correct. But no one did anything to 16:24:01  
 8 differentiate. 16:24:05  
 9 Q. One of the things you said in your report, you asked 16:24:05  
 10 the question, "Does the individual plausibly describe aspects 16:24:18  
 11 of the nature of an arsine exposure?" 16:24:23  
 12 A. Yes, sir. 16:24:25  
 13 Q. "Taste and immediate signs of response." Now, 16:24:25  
 14 Mr. Cardenas, does he report he remembers smelling garlic? 16:24:30  
 15 A. Reports a taste at the time. 16:24:35  
 16 Q. How do you taste garlic? 16:24:42  
 17 MR. WARD: Taste garlic or arsine? Object to the 16:24:46  
 18 form. Garlic or arsine? 16:24:50  
 19 MR. TUCKER: He said "the taste of garlic." 16:24:51  
 20 MR. WARD: Taste that's usually associated with 16:24:54  
 21 that is garlic. 16:24:58  
 22 A. I should have worn my T-shirt. Have you ever gone 16:25:00  
 23 to the Gilroy Garlic Festival? 200,000 people eating garlic. 16:25:06  
 24 Where that applies to your question is that for most 16:25:14  
 25 of us, for most people, odor and taste, particularly for 16:25:20

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1 of excitement going on, people thinking that "Maybe I smelled 16:27:00  
 2 garlic; maybe I ought to go get tested, checked"? 16:27:06  
 3 MR. WARD: Object to the form. 16:27:12  
 4 A. Yes, sir. In a crowd or in this situation, people 16:27:14  
 5 will be more prone to be concerned if others around them are 16:27:22  
 6 saying "You may have had this, you may have smelled this, I 16:27:26  
 7 did smell this." Others may be unsure and therefore go. 16:27:30  
 8 BY MR. TUCKER: 16:27:33  
 9 Q. And would it be particularly true if your employer 16:27:33  
 10 or officials were saying, "If you smelled garlic, we want you 16:27:37  
 11 to go to the hospital and get tested"? 16:27:40  
 12 MR. WARD: Object to the form. 16:27:44  
 13 BY MR. TUCKER: 16:27:44  
 14 Q. Wouldn't that be an even stronger indicia for that 16:27:44  
 15 to occur? 16:27:49  
 16 MR. WARD: Object to the form. 16:27:50  
 17 A. That's a hypothetical. 16:27:50  
 18 BY MR. TUCKER: 16:27:52  
 19 Q. It's a known phenomena, isn't it? Doesn't that 16:27:52  
 20 happen? 16:27:59  
 21 MR. WARD: Object to the form. Object to counsel 16:28:00  
 22 testifying. 16:28:02  
 23 A. I'm not sure who is doing what here at this point. 16:28:04  
 24 BY MR. TUCKER: 16:28:19  
 25 Q. The phenomena you and I have talked about is a known 16:28:19

40 (Pages 157 to 160)



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1 phenomena that exists anytime you have a mass of people that 16:28:23  
 2 get that kind of information, isn't it? 16:28:31  
 3 A. You sometimes do have what's called a butterfly 16:28:31  
 4 effect; that is, something causes some people in a group to 16:28:35  
 5 believe something and more of the group will until a large 16:28:39  
 6 part of the group does it. That's a crowd phenomena. But 16:28:42  
 7 that's not my area of expertise. 16:28:47  
 8 Q. When an outside official is raising the suggestion 16:28:47  
 9 that "If you smelled something like garlic, you better go to 16:28:52  
 10 the hospital and get checked," that's the kind of thing that 16:28:57  
 11 could concrete that butterfly effect, isn't it? 16:29:01  
 12 MR. WARD: Object to the form. 16:29:05  
 13 A. That would cause most prudent individuals to go 16:29:06  
 14 ahead and go to the hospital. 16:29:10  
 15 BY MR. TUCKER: 16:29:11  
 16 Q. Did any of these folks that say they smelled garlic 16:29:11  
 17 say how long they smelled it? 16:29:20  
 18 A. Some did, some didn't. 16:29:22  
 19 Q. What was the longest any of them smelled it? 16:29:25  
 20 A. I literally would have to go back through the 16:29:28  
 21 records. 16:29:31  
 22 Q. Are there any medical records that objectively 16:29:31  
 23 support a finding that Mr. Cardenas had any injury because of 16:29:48  
 24 this arsine event in July of 2001? 16:29:54  
 25 A. He has the records between the time that this event 16:30:01

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1 BY MR. TUCKER: 16:31:25  
 2 Q. What standard are you using? 16:31:25  
 3 A. When I reach — and I think for each of these 16:31:27  
 4 individuals I take you through it, that it is probable that, 16:31:30  
 5 in fact, in my best scientific opinion, that that exposure 16:31:39  
 6 occurred and there were effects secondary to it. Or in the 16:31:47  
 7 case of some people like Mr. Biddle, that it's not. 16:31:50  
 8 Q. Let's concentrate on Mr. Cardenas, because with 16:31:53  
 9 Mr. Cardenas we are fortunate enough to have blood tests at 16:31:55  
 10 the time of the event, aren't we? 16:31:59  
 11 A. We have two tests at the time of the event, yes, 16:32:01  
 12 sir. 16:32:01  
 13 Q. And both of those say nothing here supports exposure 16:32:04  
 14 to arsine, correct? 16:32:07  
 15 A. At the time those were done, yes, sir. 16:32:09  
 16 Q. And we have all of the testing that's been done by 16:32:11  
 17 Dr. Hastings since that time? 16:32:15  
 18 A. Yes, sir. 16:32:17  
 19 Q. And there's nothing in that finding blood chemistry 16:32:17  
 20 there that yields any blood abnormalities, right? 16:32:22  
 21 A. Yes, sir. 16:32:26  
 22 Q. So as far as any blood tests are concerned, nothing 16:32:28  
 23 this man ever had supports the conclusion he was exposed to 16:32:50  
 24 arsine, right? 16:32:55  
 25 A. No, sir, that's not true. You're still stuck with 16:32:56

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1 occurred and up to the time that Dr. Hastings saw him. There 16:30:07  
 2 is a pattern of reported symptomology which could be 16:30:14  
 3 consistent with arsine exposure. At the time he was taken to 16:30:19  
 4 the emergency room, he did have urine findings, which is the 16:30:26  
 5 only place that they really looked, that were — that would 16:30:31  
 6 have been consistent with arsine. 16:30:41  
 7 Q. They looked at his blood too, didn't they? 16:30:42  
 8 A. They did do blood measurements. 16:30:45  
 9 Q. They found nothing consistent with arsine there, 16:30:46  
 10 did they? 16:30:49  
 11 A. Well, the problem is they hydrated him and therefore 16:30:50  
 12 diluted the blood. And they say the same thing themselves. 16:30:53  
 13 You get a drop that's consistent with that. 16:30:58  
 14 Q. They tested him twice, didn't they? Before and 16:30:58  
 15 after hydration? 16:31:04  
 16 A. Yes, sir. 16:31:05  
 17 Q. And none of them showed any particular problem, 16:31:05  
 18 did they? 16:31:08  
 19 A. But we don't know. Neither of those was at a 16:31:09  
 20 clinically significant reduction level. 16:31:13  
 21 Q. Now, you've used words like "possibly may have 16:31:15  
 22 happened." Is that the standard that you're using to judge 16:31:18  
 23 your conclusions regarding Mr. Cardenas? 16:31:21  
 24 MR. WARD: Object to the form. 16:31:24  
 25 A. No, sir. 16:31:25

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1 the fact that you have the urine results. 16:32:59  
 2 Q. We're not to the urine yet. I asked about the 16:33:02  
 3 blood. None of the blood tests would assist in confirming the 16:33:07  
 4 diagnosis of exposure to arsine gas; is that correct? 16:33:13  
 5 MR. WARD: Object to the form of the question. 16:33:16  
 6 A. Would you repeat your question, please, sir. 16:33:18  
 7 BY MR. TUCKER: 16:33:22  
 8 Q. Is it correct that none of the blood tests on 16:33:22  
 9 Mr. Cardenas would have support to confirm a diagnosis of 16:33:25  
 10 exposure to arsine gas? 16:33:28  
 11 A. The blood tests I have, none of them show — none of 16:33:30  
 12 the blood tests that I've looked at for Mr. Cardenas establish 16:33:35  
 13 that he had arsine exposure, yes, sir. 16:33:41  
 14 Q. Then you have some blood tests that show hematuria 16:33:43  
 15 or blood in the urine; is that right? 16:33:48  
 16 A. Yes, sir. 16:33:52  
 17 Q. And that establishes there is blood in the urine; 16:33:52  
 18 isn't that right? 16:33:55  
 19 A. Blood and/or hemoglobin. You don't get 16:33:56  
 20 differentiation with the dip stick. 16:33:57  
 21 Q. And blood in the urine can be caused by many things; 16:33:57  
 22 isn't that correct? 16:34:01  
 23 A. Yes, sir. 16:34:01  
 24 Q. But plasma free hemoglobin results — comes as a 16:34:02  
 25 result of arsine? 16:34:09

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July 11, 2005

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<p>1 A. Yes, sir. 16:34:09</p> <p>2 Q. So he might have blood in the urine, he might have 16:34:10</p> <p>3 hemoglobin in the urine? 16:34:14</p> <p>4 A. Yes, sir. 16:34:15</p> <p>5 Q. And is there any test that tells you which it was? 16:34:16</p> <p>6 A. There are tests that would do that, but they were 16:34:19</p> <p>7 not done. 16:34:22</p> <p>8 Q. They weren't done on Mr. Cardenas? 16:34:23</p> <p>9 A. Yes, sir. 16:34:25</p> <p>10 Q. So we have no way to tell from the blood tests 16:34:26</p> <p>11 whether he had an indicia of exposure to arsine or not, other 16:34:30</p> <p>12 than a urine test? 16:34:37</p> <p>13 A. Yes, sir, a one-sided screen. You're right, it 16:34:38</p> <p>14 doesn't prove that he was exposed. 16:34:40</p> <p>15 Q. What we have is we have a history that he went to 16:34:43</p> <p>16 the hospital, right? 16:34:46</p> <p>17 A. Yes, sir. 16:34:46</p> <p>18 Q. And we have a history that when he got to the 16:34:47</p> <p>19 hospital, he didn't have any complaints? 16:34:50</p> <p>20 MR. WARD: Objection. Misstates the evidence. 16:34:52</p> <p>21 A. The papers that you have shown me say that, and 16:34:58</p> <p>22 based on those, in fact, his complaints were limited to 16:35:03</p> <p>23 weakness. 16:35:09</p> <p>24 BY MR. TUCKER: 16:35:11</p> <p>25 Q. He felt weak at the time from having been out in the 16:35:11</p>	<p>1 Q. Neither you or any other expert can say that his 16:36:38</p> <p>2 blood was caused by a reaction to exposure to arsine? Not 16:36:42</p> <p>3 might have been, but was? 16:36:47</p> <p>4 A. That his blood — 16:36:48</p> <p>5 Q. That the urine result, that the plus 1, plus 2 on 16:36:49</p> <p>6 the urine dipstick, that showed blood in the urine, neither 16:36:55</p> <p>7 you or anybody else can say that that was hemoglobin and 16:37:00</p> <p>8 therefore that was an indicia of arsine exposure? 16:37:03</p> <p>9 A. No one can say that it was. No one could frankly 16:37:06</p> <p>10 say because it wasn't done. 16:37:08</p> <p>11 Q. So we have the record of the fact he went to the 16:37:10</p> <p>12 hospital and the fact that he reports tastes at the time of 16:37:19</p> <p>13 the accident consistent with arsine exposure. Then you add to 16:37:23</p> <p>14 that his self-reporting of fatigue, headache, and short-term 16:37:34</p> <p>15 memory loss. When did Mr. Cardenas develop those complaints 16:37:41</p> <p>16 of fatigue, headache and short-term memory loss? 16:37:45</p> <p>17 A. There are some of those, I believe — some were 16:37:49</p> <p>18 subsequent to his release from the hospital emergency room. 16:37:54</p> <p>19 Q. When? 16:38:00</p> <p>20 A. We only know what we have in the records. 16:38:01</p> <p>21 Q. What do the records reflect as to when he made those 16:38:07</p> <p>22 complaints? 16:38:11</p> <p>23 A. I would have to pull those records and look at them 16:38:11</p> <p>24 one by one. 16:38:14</p> <p>25 Q. Would they be the records or would they be 16:38:15</p>
Page 166	Page 168
<p>1 sun, as I recall of the records and what the history showed? 16:35:16</p> <p>2 A. Well, he felt weak and he reported it. I'm not sure 16:35:19</p> <p>3 it attributed to him standing out in the sun, but he said that 16:35:23</p> <p>4 was a possible explanation. 16:35:27</p> <p>5 Q. And when he got to the hospital, he was 16:35:27</p> <p>6 symptom-free; isn't that right? 16:35:29</p> <p>7 A. Other than — based on the two pieces of paper you 16:35:30</p> <p>8 showed me, yes, sir. 16:35:38</p> <p>9 Q. When he got to the hospital, he wasn't complaining 16:35:39</p> <p>10 of weakness, was he? 16:35:41</p> <p>11 A. Not from those two pieces of paper, no, sir. 16:35:43</p> <p>12 Q. And the reason doctors take histories is because 16:35:46</p> <p>13 they take the history to find out what the patient says is 16:35:49</p> <p>14 wrong with them; is that right? 16:35:52</p> <p>15 A. Yes, sir. That was Will Rogers that said that the 16:35:54</p> <p>16 vets are much more skilled than the physician. A good 16:35:59</p> <p>17 Oklahoma person, as a matter of fact. And that is because the 16:36:05</p> <p>18 person can tell the doctor what he feels and, as you call it, 16:36:07</p> <p>19 self-report. The vet; this patient can't. 16:36:13</p> <p>20 Q. Then we have the urine record which we've concluded 16:36:16</p> <p>21 we can't tell whether that was caused by one of the things 16:36:30</p> <p>22 that cause blood in your urine or whether there was hemoglobin 16:36:33</p> <p>23 in the urine; is that correct? 16:36:37</p> <p>24 A. That is correct, sir. No one followed up so we 16:36:38</p> <p>25 don't know. 16:36:38</p>	<p>1 Dr. Hastings' reports? 16:38:18</p> <p>2 A. I would have to look to be able to answer that 16:38:20</p> <p>3 question. 16:38:22</p> <p>4 Q. Would you do that, please? 16:38:22</p> <p>5 A. Yes, sir. 16:38:24</p> <p>6 (The witness reviewed records from 4:38 p.m. to 16:38:24</p> <p>7 4:50 p.m.) 16:38:24</p> <p>8 A. In looking at the paper records, as we discussed 16:49:12</p> <p>9 while you were gone, everything is on here, (indicating) but 16:49:22</p> <p>10 only some of the records are printed. I have all of 16:49:27</p> <p>11 Dr. Hastings', but the medical records, we have to read the 16:49:30</p> <p>12 CD-ROM. You're going to copy the CD-ROM, right, or have 16:49:33</p> <p>13 someone do it? 16:49:39</p> <p>14 BY MR. TUCKER: 16:49:39</p> <p>15 Q. If they're not on the CD-ROM, sir, would that mean 16:49:45</p> <p>16 the information you got about those claims came from 16:49:49</p> <p>17 whatever's in Hastings' reports? 16:49:54</p> <p>18 A. Or whatever's attached to it, yes, sir. 16:49:56</p> <p>19 Q. Was there a time when, based upon the records that 16:50:00</p> <p>20 you read, that Mr. Cardenas went to see a urologic specialist 16:50:19</p> <p>21 in Oklahoma to determine what was causing that blood in his 16:50:24</p> <p>22 urine? 16:50:29</p> <p>23 A. We went to see a renal specialist in terms of his 16:50:29</p> <p>24 kidney problems and what would have been blood in the urine, 16:50:38</p> <p>25 yes, sir. 16:50:41</p>

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<p>1 Q. Wasn't the follow-up in December of 2001 when 16:50:41  2 Neurologic Specialists of Oklahoma reported that their 16:50:47  3 diagnosis was that he did have hematuria and that it was 16:50:51  4 benign hematuria? 16:50:55  5 A. In going through the records, I just had the ones I 16:51:00  6 printed out. I didn't have the December, but I had the later 16:51:04  7 in July. That was all they had. There were no masses. There 16:51:08  8 were no huge findings. 16:51:12  9 Q. What is benign hematuria? 16:51:14  10 A. Not clinically significant or life-threatening. 16:51:17  11 Q. Well, it means it doesn't amount to much, right? 16:51:26  12 A. I'm sorry? 16:51:26  13 Q. It doesn't amount to much? 16:51:30  14 MR. WARD: Object to the form, asked and answered. 16:51:30  15 A. It means that -- it generally is taken to mean it's 16:51:34  16 not clinically significant. We can't find any specific cause. 16:51:38  17 BY MR. TUCKER: 16:51:47  18 Q. Wouldn't you think that a urologist looking for a 16:51:47  19 specific cause would probably try to figure out if he had any 16:51:51  20 free plasma hemoglobin issues, hemoglobinuria as opposed to 16:51:56  21 blood in the urine? 16:52:00  22 A. They did -- I put it back in the stack. Strangely 16:52:01  23 enough, at least the one I looked at, that is, the later in 16:52:13  24 July one, they mostly did imaging and stuff. They didn't do 16:52:21  25 some of the differential stuff. But, yes, sir, one would 16:52:28</p>	<p>1 testimony. 16:54:25  2 (Cellphone rings) 16:54:25  3 A. I'm looking for something specific because, in fact, 16:54:41  4 he saw a urologist in a urology clinic later in the month 16:54:43  5 actually, and still had some complaints then. 16:54:48  6 BY MR. TUCKER: 16:54:50  7 Q. If you can find that, that would be great. 16:54:50  8 A. But there was a reason I was digging in this 16:54:55  9 mountain. 16:54:59  10 Kidney stone. And it goes on that says "he has 16:56:48  11 continued complaints," and this is the 17th of July. At that 16:57:51  12 point, they believed there's potentially a kidney stone but 16:57:57  13 they're not able to find the cause. They go on to December 16:58:04  14 then. 16:58:09  15 Q. What is his complaint on the 17th of July? 16:58:09  16 A. This is -- and what we've got is diagnostic reports 16:58:12  17 that I printed out. I didn't print out the doctor's notes. 16:58:25  18 Q. My question was: What were his complaints? 16:58:36  19 A. Yes, sir, I understand the question. 16:58:40  20 Q. You told me a minute ago that he had complaints in 16:58:42  21 July. Can you tell me what they were? 16:58:45  22 A. No, sir, not from this. I have the laboratory 16:58:47  23 diagnostic imaging records. I would have to go back and look 16:58:50  24 at those. 16:58:57  25 MR. TUCKER: You said you had to stop at 5:00 and 16:58:58</p>
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<p>1 expect that a competent urologist or renal person would, in 16:52:32  2 fact, try to chase every possible lead in terms of the 16:52:43  3 diagnosis. 16:52:47  4 Q. Well, my notes of this man's records, which you 16:52:47  5 don't really discuss in too great a detail in your report, was 16:52:53  6 that he was seen on July 17th by his own doctor and had no 16:52:57  7 complaints; he was seen again on July 31st by that doctor, had 16:53:02  8 no complaints; on August 24th he saw his doctor to complain 16:53:07  9 about dry skin, but otherwise no complaints; December 3rd of 16:53:16  10 2001, he saw these urology specialists, no complaints; 16:53:21  11 December 2001, he complained of left-shoulder pain; January 16:53:26  12 2002, he had microscopic benign hematuria but no other 16:53:31  13 complaints; on July 28th of 2002, in follow up, he had no 16:53:36  14 complaints. 16:53:55  15 A. I'm sorry. I am listening to you, sir. 16:53:55  16 MR. WARD: Object to the form of the question, if 16:53:55  17 it is a question. 16:53:57  18 BY MR. TUCKER: 16:53:58  19 Q. Do you know of anyplace he made any complaints that 16:53:58  20 would be even self-reported complaints that would relate to 16:54:01  21 arsine other than what he told Dr. Hastings and what he may 16:54:05  22 have testified about in his deposition? 16:54:14  23 MR. WARD: Before you answer, I object to the 16:54:16  24 form. And I would move to strike the sidebar comments 16:54:17  25 of counsel preceding the question and counsel's 16:54:21</p>	<p>1 I want to honor that. 16:59:03  2 (At 5:01 p.m., the deposition was adjourned until 16:59:03  3 July 12, 2005, at 8 a.m.) 16:59:03  4 16:59:03  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25</p>

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1 IN THE DISTRICT COURT OF ROGERS COUNTY  
2 STATE OF OKLAHOMA

3 ----- x  
4 )  
5 )  
6 DOUG INGRAM, et al., )  
7 )  
8 Plaintiff, )  
9 vs. ) NO: CJ-2001-438  
10 )  
11 SOLKATRONIC CHEMICAL, INC., )  
12 JARRAD GARRISON, JEFF K. HARRIS, )  
13 and JANE DOE, and )  
14 )  
15 AIR PRODUCTS AND CHEMICALS, INC., )  
16 and )  
17 )  
18 CITY OF TULSA-ROGERS COUNTY )  
19 PORT AUTHORITY, )  
20 )  
21 Defendants. )  
22 ----- x

## VOLUME II

23 The Deposition of SHAYNE C. GAD, Ph.D.  
24 taken by Counsel for the Defendants  
25 Cary, North Carolina  
July 12, 2005

Reported by: Stephanie Fischer  
Court Reporter  
Notary Public  
State of North Carolina

1 The continued deposition of SHAYNE C. GAD, Ph.D.,  
2 was taken pursuant to notice of counsel for the Defendants on  
3 the 12th day of July, 2005, commencing at 8:10 a.m. at the  
4 Residence Inn, 2900 Regency Parkway, Cary, North Carolina,  
5 before Stephanie Fischer, a Court Reporter and Notary Public  
6 for the State of North Carolina.  
7  
8  
9

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23  
24  
25

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## 1 EXHIBITS

## 2 DEFENDANTS' EXHIBITS MARKED FOR IDENTIFICATION:

3 NO.	4 DESCRIPTION	5 PAGE
6	Affidavit of Terry Morris .....	*
7	Cover letter dated 6/30/05 from Plaintiffs	
8	with Dr. Harrison's deposition attached .....	*
9	Cover letter dated 5/9/05 from Plaintiffs	
10	with TRI and Soil Samples attached .....	*
11	Fax and e-mails regarding articles with	
12	articles attached .....	*
13	Letter regarding changes .....	*
14	Letter dated 3/21/05 to Shayne Gad from	
15	Plaintiffs' counsel with reports of Dr. White,	
16	Dr. Carter, Dr. Banner and Dr. Pike	
17	attached .....	*
18	Shayne Gad report of 12/30/04 .....	*
19	CV of Shayne Gad .....	*
20	Undated draft report .....	*
21	Map of Clients with high Plasma Hemoglobin ..	*
22	Map of Location of 13 Plaintiffs .....	*
23	Map of Location of Defense Clients .....	*
24	Map of Location of Clients with high	
25	Hemoglobin .....	*
	Medical Records of Charles Biddle .....	*
	Medical Records of Javier Cardenas .....	*
	Medical Records of Linda Carter .....	*
	Medical Records of Obdulio Guerra .....	*
	* - Exhibit was marked prior to the deposition and was not	

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NO.	DESCRIPTION	PAGE
23	Medical Records of Teresa Haggard .....	*
24	Medical Records of Josh Hinton .....	*
25	Medical Records of Doug Ingram .....	291
26	Medical Records of Karl Kharas .....	*
27	Medical Records of Allan Miller .....	*
28	Medical Records of Dale Patton .....	*
29	Medical Records of Jennifer Shavers .....	*
30	Medical Records of Joe Santer .....	305
31	Medical Records of Bart Schmitzer .....	*
32	Single sheet saying "Lots More on CD not Printed" .....	*
33	CD of Medical Records .....	*
34	Cindy Thomas - Medtox Laboratories Report ...	*
35	Letter dated 7/7/05 to Shayne Gad with Deposition Summaries of Plaintiffs .....	*
36	Dale Patton Deposition Summary .....	*
37	CDC article "Arsine or Sibine Poisoning" ...	*
38	"The Metabolism of Inorganic Arsenic Oxides, Gallium Arsenide & Arsine" article .....	*
39	CDC article "Arsine & Sibine Poisoning" ...	*
40	CDC article "Facts about Arsine" .....	*
41	* - Exhibit was marked prior to the deposition and was not referred to during the deposition.	

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NO.	DESCRIPTION	PAGE
57	"Intermetallic Semi-Conductors & Inorganic Hybrids" .....	*
58	Rules of Civil Procedure re: Rule 26 .....	*
59	"Neurologische," etc. (Foreign article) .....	*
60	Letter dated 12/17/04 to Shayne Gad from Plaintiffs' counsel with maps and medical Records of Biddle and Haggard .....	*
61	Handwritten note by Shayne Gad .....	*
62	Handwritten note by Shayne Gad .....	*
63	Handwritten note by Shayne Gad (illegible) ..	*
64	Letter dated 9/24/04 to Shayne Gad with CD of Medical Records .....	*
65	PubMed Printouts .....	*
66	Hours and Billing Summary by Shayne Gad ....	180
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73	CDC "Facts about Arsine" .....	344
74	* - Exhibit was marked prior to the deposition and was not	

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NO.	DESCRIPTION	PAGE
41	"Assessing Community Risk from Sudden Release of Toxic Gas" article .....	*
42	"Toxic Gas Leak in Oklahoma," AP article July 12, 2001 .....	*
43	"Clinical Neurotoxicology & Neurobehavioral Toxicology" article .....	*
44	EPA Chemical Profile .....	*
45	"Medical Progress - Arsine Poisoning" .....	*
46	"Arsenic" - Chapter 71 (source unknown) ....	*
47	Injuryboard.com - "Arsine Exposure Overview" ..	*
48	CDC "Facts about Arsine" .....	*
49	"Arsenic & Arsine Gas," Chapter 213, "Medical Toxicology," 3rd Edition .....	*
50	"Arsenic, Antimony & Bismuth" - Patty's Toxicology .....	*
51	Case Report: Arsine Poisoning - "Evaluation of the Acute Phase" .....	*
52	Case Report: Arsine Poisoning - Morris Kleinfeld, M.D. ....	*
53	PubMed Articles .....	*
54	MSDS - Arsine by Praxair, Inc. ....	*
55	MSDS - APCI Air Products & Chemicals, Inc. ..	*
56	International Chemical Safety Cards .....	*
57	* - Exhibit was marked prior to the deposition and was not referred to during the deposition.	

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\*\*\*\*\*

PROCEEDINGS

Whereupon, SHAYNE C. GAD, Ph.D., a witness, having been duly sworn to tell the truth, the whole truth and nothing but the truth, was examined and testified as follows:

\*\*\*\*\*

CONTINUED EXAMINATION ON BEHALF OF THE DEFENDANTS

BY MR. TUCKER:

Q. Sir, I know you know this, but just as a formality, 08:10:26 you're still under oath from the oath you were given 08:10:31 yesterday; is that correct? 08:10:34

A. Yes, sir. 08:10:36

Q. You were going to bring me a couple articles. Did 08:10:36 you find them? 08:10:40

A. Most of what you asked for we got. First you wanted 08:10:41 hours and billing summary, and I had to go back to my time 08:10:47 sheets and stuff, but that is it. Those are hours total, 08:10:52 dollars total. 08:10:58

(Gad Deposition Exhibit Number 66 was marked for 08:11:00 identification.) 08:11:00

BY MR. TUCKER: 08:11:00

Q. I'll mark that Exhibit 66, if that's okay. 08:11:00

A. You didn't ask for this, but I found it anyway. 08:11:08

There was -- I did print out one other e-mail but it turns out 08:11:13 to be directions to get here, but in the theory of 08:11:24

2 (Pages 177 to 180)



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1 completeness. 08:11:29  
 2 You asked about Patty's and you actually -- we have 08:11:30  
 3 in what's already there a copy of the Patty's entry except -- 08:11:35  
 4 Q. Is that it? 08:11:41  
 5 A. That's Dart. 08:11:43  
 6 Q. Is that it? 08:11:45  
 7 MR. WARD: Dart's the one that has "Dart" up there 08:11:48  
 8 in the left-hand corner? 08:11:49  
 9 THE WITNESS: That could be. 08:11:51  
 10 A. Except that Patty's -- what you have there is minus, 08:11:52  
 11 from Volume 8 -- Patty's tox part is like nine volumes. 08:11:55  
 12 Volume 8 is a list of all of the guidance information for 08:12:03  
 13 different agencies and overseas, et cetera. So that's in 08:12:06  
 14 addition to that. 08:12:13  
 15 MR. WARD: Can I see the exhibits you've marked so 08:12:28  
 16 far? 08:12:31  
 17 MR. TUCKER: That's Exhibit 66, 67, and 68. 08:12:32  
 18 (Gad Deposition Exhibit Numbers 67 and 68 were 08:12:40  
 19 marked for identification.) 08:12:40  
 20 BY MR. TUCKER: 08:12:41  
 21 A. Okay. You asked for what the DOD stuff was. I 08:12:41  
 22 don't hold any of those papers anymore. The classified stuff 08:12:49  
 23 all -- when I remarried and moved from my house where I did 08:12:56  
 24 have a safe where I could hold classified stuff, I don't 08:13:01  
 25 anymore in my office. 08:13:05

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1 that, but I couldn't find it. I have to admit that I 08:15:07  
 2 didn't -- I stayed up until 12:30 last night doing various 08:15:11  
 3 stuff. We'll make copies for you. 08:15:17  
 4 If I could borrow a pen from somebody briefly. And 08:15:26  
 5 who should I -- 08:15:38  
 6 Q. To Mr. Ward. 08:15:41  
 7 MR. WARD: While you're writing, would you 08:15:44  
 8 again -- I'm not sure you did say, but would you tell 08:15:47  
 9 us what Exhibit Number 68 represented? 08:15:51  
 10 A. It's in Volume 8 of Patty's. Volume 8 is 08:16:00  
 11 essentially an alpha list of all of the regulatory industrial 08:16:05  
 12 hygiene effect level stuff. And this particular page, 08:16:11  
 13 Page 1128, Volume 8 of Patty's, is arsine. And there is a CAS 08:16:14  
 14 number, the chemical abstract service number, and here is all 08:16:18  
 15 of the U.S. exposure levels, and then in this particular case, 08:16:20  
 16 everywhere from the Arab Republic of Egypt to the UK and with 08:16:25  
 17 the Philippines and God knows who else in between. 08:16:32  
 18 MR. WARD: When you say "exposure levels," you 08:16:34  
 19 mean maximum exposure levels? 08:16:35  
 20 A. These are regulatory set occupational exposure 08:16:38  
 21 levels. 08:16:43  
 22 MR. WARD: Okay. 08:16:44  
 23 A. They're derived in a manner of different ways. 08:16:45  
 24 MR. WARD: Okay. 08:16:50  
 25 08:16:50

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1 But the detection limit, the DOD detection limit 08:13:06  
 2 set -- and this is in the context of they wanted to know what 08:13:11  
 3 level they had designed detectors in the field in case of gas 08:13:16  
 4 attacks and such. But the DOD detection limit we set was 08:13:20  
 5 0.01 ppm, and it was set on a ten-fold safety factor for a 08:13:26  
 6 NOAEL, no adverse -- no observable adverse effect level of 0.1 08:13:30  
 7 ppm for a six-hour exposure data. That's all I retained. 08:13:36  
 8 That's my official sticky note. 08:13:42  
 9 You asked for a copy of the report on the Ward thing 08:13:44  
 10 that had been federal -- 08:13:48  
 11 Q. Would you start that answer again? 08:13:53  
 12 A. Sure. You asked for a copy of the Lilly versus 08:13:55  
 13 Zenith that had been federal. I don't know if I have that 08:14:00  
 14 report or not, but the file is in off-cited storage. 08:14:04  
 15 Remember, our only product is paper, and we don't hold every 08:14:10  
 16 piece of paper. If it gets sent to storage -- I had no access 08:14:15  
 17 last night. I will, but not today. I left a note for one of 08:14:21  
 18 my assistants to go out and pull that file. If it's there, 08:14:25  
 19 we'll make it available to you. Like I said, I don't know 08:14:29  
 20 whether I have that or not, but I will check. 08:14:32  
 21 Q. Okay. 08:14:35  
 22 A. The last thing I believe you asked for was the 08:14:36  
 23 articles from -- the entry from Encyclopaedia Tox, and my 08:14:40  
 24 elves, as my wife calls them, have been very busy. And 08:14:57  
 25 somewhere in that litter around the room, we do hold a copy of 08:15:02

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1 BY MR. TUCKER: 08:17:01  
 2 Q. Number 69 is a handwritten note in which you're 08:17:01  
 3 referring to DOD detection limits? 08:17:06  
 4 A. Yes, sir. 08:17:09  
 5 Q. Where did you get that information? 08:17:10  
 6 A. I still had in one of my day books, I call them -- 08:17:12  
 7 like most scientists, I keep a thing where I write down 08:17:22  
 8 things I did. I still had that and a bunch of the others, 08:17:27  
 9 some of the mustards and some of the OPs. That's all I 08:17:31  
 10 retained on that. 08:17:35  
 11 Q. What does .001 ppm translate to in parts per 08:17:36  
 12 billion? 08:17:40  
 13 A. That would be 10 ppb. 08:17:40  
 14 Q. And that is the detection limit? 08:17:44  
 15 A. That is the detection limit. That's the limit that 08:17:47  
 16 above that, the opinion was that it could degrade operational 08:17:51  
 17 capabilities in the field and, therefore the limit that should 08:17:59  
 18 be done -- the detector should be designed to detect 08:18:02  
 19 instruments. 08:18:06  
 20 You may remember we were embarrassed in the Gulf War 08:18:07  
 21 when the Poles and everybody else -- we denied it for a couple 08:18:11  
 22 of years that there were any gas releases and the Poles 08:18:17  
 23 detected them, so they put a lot of money into that. 08:18:19  
 24 Q. Now, you were going to bring me the Dart article and 08:18:25  
 25 the Patty's article. Are the articles I have in front of 08:18:30

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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

<p style="text-align: right;">Page 185</p> <p>1 me -- those were attached to your report -- are those the ones 08:18:36</p> <p>2 you're talking about? 08:18:41</p> <p>3 A. Yes, sir. 08:18:42</p> <p>4 Q. Yesterday you told us that -- we're talking about 08:18:42</p> <p>5 blood levels? 08:18:51</p> <p>6 A. Yes, sir. 08:18:53</p> <p>7 Q. And you told me that one-tenth to two-tenths grams 08:18:53</p> <p>8 of plasma free hemoglobin per 100 milliliters was an area that 08:18:57</p> <p>9 would cause you concern. You based that, you told me 08:19:03</p> <p>10 yesterday, on Patty's and Dart. 08:19:06</p> <p>11 A. I thought those were two of the sources. I based it 08:19:09</p> <p>12 on everything I've seen. 08:19:12</p> <p>13 Q. Would you take those two articles and show me where 08:19:12</p> <p>14 that value is given? 08:19:15</p> <p>15 A. I'll see if it's in here. 08:19:17</p> <p>16 Q. You highlighted these two articles. What was the 08:19:33</p> <p>17 purpose of the highlighting? 08:29:54</p> <p>18 A. Just points to remember, memory for myself that I 08:29:55</p> <p>19 saw. The Dart, there actually is some blood level data, but 08:29:59</p> <p>20 it makes a point also that blood levels of arsenic are fairly 08:30:16</p> <p>21 transitory, generally not a good marker or place to measure 08:30:23</p> <p>22 for exposure. 08:30:28</p> <p>23 Q. Not good measure for arsenic, it says. 08:30:28</p> <p>24 A. Well, arsenic or any of the -- I mean, the valence 08:30:32</p> <p>25 isn't going to matter here too much. Arsenic is going to be 08:30:36</p>	<p style="text-align: right;">Page 187</p> <p>1 measuring arsenic in the blood? 08:31:42</p> <p>2 A. I think I already answered that; I said, no, sir. 08:31:44</p> <p>3 Q. Now, Exhibit 70, which is Dart, and Exhibit 71, 08:31:48</p> <p>4 which is Patty's, with the add-on of Exhibit 68, which gives 08:31:52</p> <p>5 the PEL and the TLV for arsine exposure, going back to the 08:31:56</p> <p>6 original question which is: What you said yesterday -- you 08:32:07</p> <p>7 told me yesterday that if you've got blood levels of one-tenth 08:32:09</p> <p>8 to two-tenths grams of plasma free hemoglobin per 08:32:14</p> <p>9 100 milliliters that would concern you about exposure to 08:32:19</p> <p>10 arsine? 08:32:21</p> <p>11 A. Yes, sir. 08:32:22</p> <p>12 Q. And you reference those two articles. Where in 08:32:23</p> <p>13 those two articles does it say that? 08:32:25</p> <p>14 A. One was -- what I said yesterday was I thought they 08:32:28</p> <p>15 came from these two articles, and they were in the bulk of 08:32:32</p> <p>16 what I read. But -- 08:32:35</p> <p>17 Q. The point of fact is that neither one of those 08:32:41</p> <p>18 articles says that, does it? 08:32:43</p> <p>19 A. No, sir. They cite lower levels as being a concern. 08:32:45</p> <p>20 Q. Of plasma free hemoglobin? 08:32:49</p> <p>21 A. Arsenic. You asked arsenic levels. 08:32:53</p> <p>22 Q. No, sir. No, sir. If you'll recall yesterday's 08:32:55</p> <p>23 question -- and we can ask Stephanie to look it back up, if 08:32:57</p> <p>24 you'd like -- you told me that one-tenth to two-tenths grams 08:33:01</p> <p>25 of plasma free hemoglobin per 100 milliliters, if you're 08:33:04</p>
<p style="text-align: right;">Page 186</p> <p>1 the same. The arsine is not going to stick in the blood for a 08:30:40</p> <p>2 protracted period of time. 08:30:45</p> <p>3 Q. On the Dart article, read the points that are 08:30:45</p> <p>4 highlighted. 08:30:49</p> <p>5 MR. WARD: Have those been identified by sticker 08:30:50</p> <p>6 numbers? 08:30:53</p> <p>7 MR. TUCKER: Exhibit 70 and 71. 08:30:54</p> <p>8 (Gad Deposition Exhibit Numbers 70 and 71 were 08:30:56</p> <p>9 marked for identification.) 08:30:56</p> <p>10 A. "Blood arsenic level is rarely useful because of its 08:30:56</p> <p>11 short half-life in the blood, approximately 2 hours." 08:31:01</p> <p>12 BY MR. TUCKER: 08:31:01</p> <p>13 Q. Now, did we talk at all yesterday or today about the 08:31:05</p> <p>14 blood arsenic level? 08:31:07</p> <p>15 A. Arsenic, one form of arsenic, yes. 08:31:09</p> <p>16 Q. That would be measuring the amount of arsenic in the 08:31:11</p> <p>17 blood; is that right? 08:31:19</p> <p>18 A. No, sir. 08:31:21</p> <p>19 Q. Arsenical in the blood? 08:31:21</p> <p>20 A. No, sir. 08:31:24</p> <p>21 Q. Well, what is a blood arsenic level? 08:31:24</p> <p>22 A. That's measuring the level of arsenic in the blood. 08:31:29</p> <p>23 Q. That's what this article in Number 70, which is the 08:31:32</p> <p>24 article you referred to yesterday, the Dart article, refers 08:31:35</p> <p>25 to. Have we talked yesterday or today one time about 08:31:38</p>	<p style="text-align: right;">Page 188</p> <p>1 looking at blood tests -- that's when we were talking about, 08:33:08</p> <p>2 how could you tell looking at blood tests whether someone had 08:33:10</p> <p>3 been exposed to arsine? 08:33:14</p> <p>4 You said one-tenth to two-tenths grams of plasma 08:33:16</p> <p>5 free hemoglobin per 100 milliliters would be that level, that 08:33:16</p> <p>6 threshold level. 08:33:20</p> <p>7 A. Increases of, yes, sir, I did say that. 08:33:20</p> <p>8 Q. You said you based that upon the Patty's and the 08:33:23</p> <p>9 Dart articles. 08:33:26</p> <p>10 A. I believe that what I said, and if I was not clear, 08:33:28</p> <p>11 I apologize. But I believe that what I said was I thought 08:33:32</p> <p>12 those had come from Patty's and Dart. 08:33:37</p> <p>13 Q. And you find it's not in either one of those 08:33:39</p> <p>14 articles, is it? 08:33:43</p> <p>15 A. In terms of increased levels, no, sir. 08:33:43</p> <p>16 Q. That statement, those levels are not referred to in 08:33:45</p> <p>17 either one of those articles; is that correct? 08:33:50</p> <p>18 A. I can't find them right now. I don't believe so, 08:33:52</p> <p>19 sir. 08:33:53</p> <p>20 Q. Can you direct me to any peer-reviewed literature 08:33:53</p> <p>21 that sets out that value that you set out yesterday of 08:33:58</p> <p>22 one-tenth to two-tenths grams of plasma free hemoglobin per 08:34:01</p> <p>23 100 milliliters of blood? 08:34:01</p> <p>24 I've got in front of me every article from your file 08:34:09</p> <p>25 and it's all highlighted with your highlighting. 08:34:12</p>

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<p>1 A. Okay. 08:34:18</p> <p>2 Q. Those are not my copies of your exhibits. Those are 08:34:19</p> <p>3 your copies of your exhibits. 08:34:23</p> <p>4 A. Okay. Thank you. I could go through these and see 08:34:25</p> <p>5 if I could find them if you want me to do so. 08:34:30</p> <p>6 Q. Is that something you would have highlighted? Would 08:34:34</p> <p>7 that have been important to you? 08:34:36</p> <p>8 A. I probably would have, yes, sir. 08:34:38</p> <p>9 Q. Do you want to look at your highlighting? That 08:34:39</p> <p>10 shouldn't take you very long. 08:34:43</p> <p>11 MR. WARD: You're asking him to look at the 08:34:45</p> <p>12 highlighting, not all of the text of the articles? 08:34:47</p> <p>13 BY MR. TUCKER: 08:34:48</p> <p>14 Q. Let's put it this way, you made a statement 08:34:48</p> <p>15 yesterday that was a pretty definitive statement, "One-tenth 08:34:49</p> <p>16 to two-tenths grams of plasma free hemoglobin per 08:34:55</p> <p>17 100 milliliters" -- we now know it's not in either Patty's or 08:34:59</p> <p>18 Dart. Can you remember where else it might be? 08:35:03</p> <p>19 A. First of all, I said increases of one-tenth to 08:35:06</p> <p>20 two-tenths, not levels of one-tenth to two-tenths. You might 08:35:09</p> <p>21 well get those as background -- 08:35:14</p> <p>22 Q. Increases -- 08:35:18</p> <p>23 A. -- in free plasma hemoglobin. 08:35:19</p> <p>24 Q. What does that mean, increases of one-tenth to 08:35:22</p> <p>25 two-tenths? 08:35:26</p>	<p>1 Q. Let's just get a range, shall we? 08:37:29</p> <p>2 THE WITNESS: You put these in order. So that I 08:37:42</p> <p>3 don't destroy it, what was your order? 08:37:45</p> <p>4 MS. SMITH: All of the medical records, which is 08:37:48</p> <p>5 I assume what we want to look at now, begins there and 08:37:52</p> <p>6 are in that stack by plaintiff. 08:37:55</p> <p>7 MR. TUCKER: In alphabetical order. 08:37:58</p> <p>8 MS. SMITH: And if there's a particular one you're 08:38:01</p> <p>9 looking for, I can give you the number on it. 08:38:06</p> <p>10 (The witness reviewed records from 8:38 a.m. to 08:38:06</p> <p>11 8:44 a.m.) 08:38:06</p> <p>12 BY MR. TUCKER: 08:43:31</p> <p>13 Q. What did you find, sir? 08:43:31</p> <p>14 A. There are no reference ranges in there to help 08:43:33</p> <p>15 refresh me. They didn't measure plasma free hemoglobin in 08:43:38</p> <p>16 these individuals. There are no ranges listed there. Some 08:43:41</p> <p>17 are normal. So I would have to go back to my references. 08:43:44</p> <p>18 Q. What you thought is that -- what you were talking 08:43:47</p> <p>19 about yesterday was that whatever the normal range is -- and 08:43:49</p> <p>20 let's assume that it's zero to 10 1/2 -- 08:43:53</p> <p>21 A. Yes, sir. 08:43:57</p> <p>22 Q. -- then what you're saying you would be concerned 08:43:58</p> <p>23 about would be if it was what? 08:44:03</p> <p>24 A. If you saw an increase of greater than one-tenth to 08:44:05</p> <p>25 two-tenths. 08:44:14</p>
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<p>1 A. It means in an individual, and I prefaced all of 08:35:27</p> <p>2 this by saying you have to -- to do it right, you have to have 08:35:30</p> <p>3 baselines for an individual and look at changes, because there 08:35:36</p> <p>4 is individual variation. 08:35:39</p> <p>5 And, in fact, you see that that is referred to 08:35:41</p> <p>6 across the board here, the level that may be normal. And, in 08:35:44</p> <p>7 fact, we talked about Mr. Cardenas yesterday, the level that 08:35:49</p> <p>8 may be normal for either hematocrit or for plasma free 08:35:54</p> <p>9 hemoglobin or for any of these has a range of variability. 08:35:59</p> <p>10 Q. What is the range? 08:36:01</p> <p>11 A. It depends on the parameter. 08:36:02</p> <p>12 Q. Plasma free hemoglobin? 08:36:04</p> <p>13 A. Plasma free hemoglobin can be as high as -- can be 08:36:05</p> <p>14 higher than 10, 10 1/2 or so. 08:36:21</p> <p>15 Q. Ten, 10 1/2 what? What is the scale you're using? 08:36:24</p> <p>16 Ten what? 08:36:31</p> <p>17 A. I'm trying to remember. Sorry. I believe we were 08:36:34</p> <p>18 talking, in fact, grams per 100 ml. And actually, I know -- 08:36:43</p> <p>19 what I'm remembering then is 10 to 10 1/2 grams per ml of 08:37:00</p> <p>20 blood bound cellular hemoglobin. I'm remembering the wrong 08:37:05</p> <p>21 thing. Let me correct that. 08:37:15</p> <p>22 Q. I need to know what the normal range would be for 08:37:17</p> <p>23 plasma free hemoglobin. 08:37:19</p> <p>24 A. Okay. It's going to vary from individual to 08:37:22</p> <p>25 individual. That's easy actually to pull up. 08:37:25</p>	<p>1 Q. So if the normal range is zero to 10 1/2, then you 08:44:15</p> <p>2 would be concerned if it was what number on that scale? 08:44:20</p> <p>3 A. If you saw an increase in an individual of more than 08:44:22</p> <p>4 one-tenth to two-tenths. That's why you have to have the -- 08:44:26</p> <p>5 Q. So what would the number be? How would you report 08:44:31</p> <p>6 the increase of one-tenth? 08:44:36</p> <p>7 A. Depends on what the individual's background is. 08:44:36</p> <p>8 Q. How would you report a number of two-tenths 08:44:36</p> <p>9 increase? If the normal range is up to 10.5 and you see an 08:44:39</p> <p>10 increase of two-tenths, that number is going to be what? 08:44:44</p> <p>11 Instead of 10.5, it's going to be -- 08:44:48</p> <p>12 A. If in that individual his normal values were sitting 08:44:48</p> <p>13 in the range -- or when he -- you brought him in right after 08:44:53</p> <p>14 the exposure, you measured, you found -- using your numbers, 08:45:01</p> <p>15 you found 10, and if two hours later you were looking at 10.2, 08:45:08</p> <p>16 an increase of two-tenths, at that point I would be concerned. 08:45:15</p> <p>17 Q. Now, that assumes that the 10.5 is reporting grams 08:45:20</p> <p>18 per milliliter, doesn't it? 08:45:25</p> <p>19 A. No, a dimensionally free scale. But, yes, sir. 08:45:29</p> <p>20 Q. So grams per milliliter would be 100 to 200 08:45:33</p> <p>21 milligrams per deciliter. Then what would be -- never mind. 08:45:39</p> <p>22 Now, saying all of that to be so, can you direct me 08:45:42</p> <p>23 to any peer-reviewed article that supports what you testified 08:45:48</p> <p>24 to yesterday, whether it's a base value of or an increase of 08:45:57</p> <p>25 one-tenth to two-tenths grams of plasma free hemoglobin per 08:46:03</p>

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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

<p style="text-align: right;">Page 193</p> <p>1 100 milliliters is where you would be concerned in determining 08:46:09  2 a diagnosis of exposure to arsine gas? 08:46:14  3 A. I can look in these and see if it's in these, if you 08:46:17  4 wish me to do so. I don't recollect where -- I mean, I looked 08:46:21  5 at a great deal of literature. I looked at text on 08:46:26  6 hematology, I looked at text on clinical chemistry. I looked 08:46:31  7 at a great deal of literature, so eventually, yes, I could 08:46:36  8 find it. But if you wish, I can look at these and see if I 08:46:38  9 can point it out in these. 08:46:40  10 Q. Well, we agreed that plasma free hemoglobin measure 08:46:40  11 is a very important fact in looking at an arsine matter, isn't 08:46:43  12 it? 08:46:47  13 A. Acutely, yes, sir. 08:46:47  14 Q. Because plasma free hemoglobin is one of the signals 08:46:49  15 of exposure to arsine gas, isn't it? 08:46:53  16 A. It's one of the inconvertible -- it's one of the 08:46:56  17 things that if you see this, it is usually related to 08:47:01  18 basophilic stippling, would probably be more to the case. But 08:47:06  19 it's one of the things that you would look for first. It 08:47:11  20 would cause you, if you saw the change, if you saw a signal 08:47:14  21 change, to want to ask to clarify the issue or consider that 08:47:17  22 you might be looking at a causative effect. 08:47:22  23 Q. So what I'm saying is that when you start looking at 08:47:24  24 someone's plasma free hemoglobin levels, if you're a doctor, 08:47:28  25 that's important to you to determine what this man's been 08:47:32</p>	<p style="text-align: right;">Page 195</p> <p>1 remember his own work and even then over 30 years it may not 08:49:04  2 even be doable for most of us as we get a little more mature, 08:49:09  3 exactly what article may have caused this and review of the 08:49:13  4 literature that is a fairly substantial literature doesn't 08:49:17  5 mean that it doesn't exist. It means simply that you're 08:49:21  6 looking at a lot of stuff and you would have to go back and 08:49:31  7 reconstruct, particularly when we're talking about a report I 08:49:35  8 produced more than a year ago in both cases. 08:49:39  9 Q. Well, let me show you one of the articles that you 08:49:43  10 attached as your references for your report to see if that can 08:49:46  11 provide you some guidance about plasma free hemoglobin levels. 08:49:57  12 This is my copy of your report, but I'm just going to show 08:50:54  13 you. This is your first report, December 30, 2004, and that's 08:50:58  14 your list of references; is that correct? 08:51:03  15 A. Yes, sir. 08:51:05  16 Q. I'm going to show you the first article on that list 08:51:05  17 of references which is "Arsine Toxicity: Chemical and 08:51:09  18 Mechanistic Implications" by Klimecki and Carter. Do you 08:51:14  19 remember that article? 08:51:20  20 A. Yes, sir. 08:51:20  21 Q. I want to address your attention to Page 403 of that 08:51:21  22 article and ask you to look at the second paragraph and tell 08:51:32  23 me if references are made to plasma hemoglobin levels in 08:51:37  24 response to exposure to arsine. 08:51:43  25 A. Yes, sir. 08:51:47</p>
<p style="text-align: right;">Page 194</p> <p>1 exposed to, if anything, isn't it? 08:47:35  2 A. Yes, sir. 08:47:37  3 Q. So the conclusion that you've reached or the opinion 08:47:37  4 you've given or the statements that you've made, whichever is 08:47:40  5 the most accurate, that an increase or a level of one- to 08:47:43  6 two-tenths grams of PFH per 100 milliliters is a really big 08:47:51  7 deal? 08:47:57  8 A. In an individual. 08:47:58  9 Q. And you cite me to two textbooks to support that 08:48:00  10 statement, and it's not in there -- 08:48:05  11 MR. WARD: Objection, argumentative. 08:48:07  12 BY MR. TUCKER: 08:48:09  13 Q. -- and you're telling me you don't remember where 08:48:09  14 you read it, why is it you wouldn't be able to have considered 08:48:12  15 that sufficiently important to attach it to your articles that 08:48:17  16 you referenced and relied on in your report? 08:48:21  17 A. Okay. Let's decompose the complex question. First 08:48:24  18 of all, I say again, I said I believed yesterday, I believed I 08:48:28  19 was likely to find them in here, but I didn't say this was 08:48:34  20 necessarily where they came from. When asked by you yesterday 08:48:38  21 where I might be able to show and reference this, I cited 08:48:41  22 these two. Okay? 08:48:44  23 Second part, I can't recollect -- when you've been a 08:48:46  24 toxicologist, a scientist for 30 years and you read a lot of 08:48:53  25 stuff, asking anyone in those situations, other than to 08:48:58</p>	<p style="text-align: right;">Page 196</p> <p>1 Q. What does your reference article state with regard 08:52:22  2 to plasma free hemoglobin levels? 08:52:28  3 A. Well, what he says is -- and this starts with 08:52:31  4 "Laboratory analysis demonstrating indices of hemolytic 08:52:37  5 anemia, plasma hemoglobin values often rise to greater than 08:52:41  6 2 grams per deciliter," 2 grams per 100 mls. "18.5 grams per 08:52:46  7 deciliter has been reported." 08:52:55  8 Q. That's the same scale and measurement you were using 08:52:57  9 when you talked about -- that's not the same measurements you 08:53:01  10 were using, is it? 08:53:08  11 A. Grams per 100 mls/grams per deciliter. Yes, they 08:53:08  12 are the same. 08:53:12  13 Q. All right. Well, I'm going to cut you some slack 08:53:13  14 here because -- 08:53:18  15 MR. WARD: Object to the form of the question. 08:53:19  16 MR. TUCKER: I haven't asked the question. 08:53:21  17 MR. WARD: Well, I object to the sidebar comment 08:53:23  18 that you're cutting him slack. 08:53:27  19 MR. TUCKER: Let me refresh the question a little 08:53:30  20 differently then. 08:53:32  21 MR. WARD: Thank you. 08:53:32  22 BY MR. TUCKER: 08:53:33  23 Q. You indicated that you have 30 years' experience as 08:53:33  24 a toxicologist and as you sit here today you can't remember 08:53:36  25 where you read that about the one-tenth to two-tenths grams 08:53:40</p>

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1 per -- of plasma free hemoglobin per 100 milliliters. 08:53:44  
 2 So what I would like to ask you to do is, I would 08:53:53  
 3 like to give you the opportunity to supplement your deposition 08:53:57  
 4 with that reference, rather than take the time to read through 08:54:00  
 5 all of your references that you have in front of you today 08:54:04  
 6 because I realize your time is valuable and I don't want to 08:54:04  
 7 take that time to do that. So would you do that for me, 08:54:08  
 8 please? 08:54:11  
 9 A. I will add that to my list, sir. 08:54:12  
 10 Q. Can I ask you a question while you're writing it 08:54:22  
 11 down? 08:54:25  
 12 A. Yes, sir. 08:54:25  
 13 (Gad Deposition Exhibit Number 69 was marked for 08:54:25  
 14 identification.) 08:54:25  
 15 BY MR. TUCKER: 08:54:26  
 16 Q. Defendant's Exhibit Number 69 -- directing your 08:54:26  
 17 attention back to Exhibit Number 69 which is your handwritten 08:55:01  
 18 note there. 08:55:04  
 19 A. Yes, sir. 08:55:05  
 20 Q. And you said detection limit should be set at 08:55:05  
 21 .01 ppm? 08:55:12  
 22 A. Yes, sir. 08:55:12  
 23 Q. Now that says on a safety factor of 10. 08:55:12  
 24 A. Yes, sir. 08:55:16  
 25 Q. What does that mean? 08:55:16

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1 there was blood found in the urine? 08:56:58  
 2 A. We had blood in the urine, yes, sir. 08:57:00  
 3 Q. And yesterday, you could not find in your records 08:57:03  
 4 any determination whether there had been a follow-up test, 08:57:05  
 5 microscopic test, to separate out whether that was red blood 08:57:10  
 6 cells or hemoglobin; is that right? 08:57:14  
 7 A. Yes, sir, looking at the information that's printed 08:57:15  
 8 out here. 08:57:20  
 9 Q. Now, you're not a medical doctor, are you? 08:57:20  
 10 A. No, sir. 08:57:22  
 11 Q. And you received Dr. Harrison's deposition, but you 08:57:23  
 12 have not had a chance to read it yet; is that correct? 08:57:27  
 13 A. Yes, sir. 08:57:30  
 14 Q. Let me read to you from Dr. Harrison's deposition 08:57:30  
 15 from Pages 262 and 263. 08:57:38  
 16 MR. GAD: Let me interject. If it's going to take 08:57:43  
 17 very long, we're coming up on that 9:00 conference 08:57:46  
 18 call. 08:57:51  
 19 MR. TUCKER: Go make your call. 08:57:51  
 20 (A break was taken from 8:57 a.m. to 9:38 a.m.) 08:57:51  
 21 BY MR. TUCKER: 09:38:18  
 22 Q. Sir, we've taken a break so you could have your 09:38:18  
 23 call, but we would like to direct your attention back to 09:38:26  
 24 Mr. Cardenas. 09:38:29  
 25 A. Yes, sir. 09:38:29

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1 A. That means that there is -- it's ten-fold below what 08:55:18  
 2 we have data showing as a no observable adverse effect level. 08:55:27  
 3 So you do it -- it's ten-fold lower for individual biologic 08:55:32  
 4 variation. 08:55:37  
 5 Q. So what is the no observable adverse effect level? 08:55:37  
 6 A. In this particular case for six-hour exposure data, 08:55:42  
 7 0.1 ppm for a single six-hour exposure. 08:55:47  
 8 Q. But we're talking about an exposure that you want to 08:55:49  
 9 have a trigger on. So the trigger is based upon an NOAEL of 08:55:54  
 10 100 parts per million? 08:55:58  
 11 A. Yes, sir, that would be correct. 08:56:01  
 12 Q. And you're reducing it by a factor of 10? 08:56:02  
 13 A. Yes, sir. 08:56:06  
 14 Q. I want to direct your thoughts back to Mr. Cardenas. 08:56:06  
 15 A. Yes, sir. 08:56:23  
 16 Q. We found out yesterday, and I'm going to try to 08:56:24  
 17 recapitulate sort of the summaries that we reached yesterday, 08:56:34  
 18 and if I say something wrong, please tell me. I'm going to 08:56:37  
 19 try to be general about it. 08:56:41  
 20 We found out yesterday with respect to Mr. Cardenas 08:56:43  
 21 we had no blood work which confirmed exposure to arsine; is 08:56:45  
 22 that correct? 08:56:49  
 23 A. Yes, sir. 08:56:49  
 24 Q. And the thing that confirmed the exposure to arsine, 08:56:50  
 25 in your mind, or at least made it possible, was the fact that 08:56:55

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1 Q. I was telling you that I was going to read to you 09:38:30  
 2 from Dr. Harrison's deposition. 09:38:35  
 3 A. Which I have not read. 09:38:35  
 4 Q. Which you have not read, so I appreciate you're 09:38:35  
 5 going to have to listen to something out of context. You 09:38:39  
 6 understand Dr. Harrison is a medical doctor? 09:38:39  
 7 A. Yes, sir. 09:38:41  
 8 Q. In talking about Mr. Cardenas at Page 262, Line 24, 09:38:42  
 9 "And your chart shows urinalysis plus blood, but it does not 09:38:54  
 10 show hemoglobinuria. It just shows blood. Are we talking 09:39:00  
 11 about hematuria or hemoglobinuria?" 09:39:04  
 12 And that's what you and I were talking about 09:39:04  
 13 yesterday. 09:39:09  
 14 A. Yes, sir. 09:39:09  
 15 Q. And you said you couldn't tell when you looked at 09:39:09  
 16 the records which it was? 09:39:13  
 17 A. Yes, sir. 09:39:13  
 18 Q. So the -- so my question was: "Are we talking about 09:39:14  
 19 hematuria or hemoglobinuria?" 09:39:22  
 20 And Dr. Harrison's answer: "His urine microscopic 09:39:23  
 21 showed blood cells, so we're talking about hematuria in his 09:39:27  
 22 case." 09:39:32  
 23 Question: "Which is different than what you would 09:39:33  
 24 expect to find as a consequence of red blood cell destruction 09:39:35  
 25 at the hands of arsine?" 09:39:39

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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

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<p>1 Answer: "Correct." 09:39:42</p> <p>2 Then I'll hand you the laboratory report on 09:39:44</p> <p>3 Mr. Cardenas, which was in your file, which demonstrates that 09:39:47</p> <p>4 there was a microscopic follow-up on the check of the 09:39:53</p> <p>5 urinalysis that showed blood and it showed red blood cells; is 09:39:56</p> <p>6 that right? 09:39:59</p> <p>7 A. Yes, sir, showed the two RBCs. 09:39:59</p> <p>8 Q. Would it change your opinion now that you know that 09:40:05</p> <p>9 the urine test was negative for hemoglobinuria about 09:40:11</p> <p>10 Mr. Cardenas? 09:40:15</p> <p>11 A. It was not negative. You didn't measure. Okay? 09:40:16</p> <p>12 What you have there is they did a microscopic and they did 09:40:21</p> <p>13 find some red cells. That doesn't mean necessarily that you 09:40:26</p> <p>14 didn't also have free hemoglobin. 09:40:32</p> <p>15 Q. So when Dr. Harrison says "His urine microscopic 09:40:35</p> <p>16 showed blood cells, so we're talking about hematuria in his 09:40:41</p> <p>17 case and not hemoglobinuria." Do you disagree with 09:40:45</p> <p>18 Dr. Harrison? 09:40:50</p> <p>19 A. Yes, sir. He may be right. He may not. If you 09:40:50</p> <p>20 didn't look, you don't know if it's not there or it's there. 09:40:53</p> <p>21 Q. And you think Dr. Harrison, as a medical doctor who 09:40:57</p> <p>22 is being presented as an expert in this case, is not smart 09:41:01</p> <p>23 enough to know what these laboratory results show? 09:41:05</p> <p>24 A. No, sir. I think his point of view is different. 09:41:08</p> <p>25 A doctor doing diagnosis and treatment is different than a 09:41:10</p>	<p>1 Q. I'm sorry. Giving opinions as to exposures to 09:42:58</p> <p>2 hazardous materials when none of the objective findings that 09:43:01</p> <p>3 one would expect to find resulting from such an exposure are 09:43:05</p> <p>4 present in an individual? Is that a normal toxicologist's way 09:43:10</p> <p>5 of giving an opinion? 09:43:13</p> <p>6 A. When you're trying to give an opinion as to 09:43:14</p> <p>7 causality, you have to look across the range of available 09:43:17</p> <p>8 data. 09:43:21</p> <p>9 Q. Okay. 09:43:22</p> <p>10 A. You would like as complete a data set as possible. 09:43:22</p> <p>11 Q. Was that a yes or a no? 09:43:27</p> <p>12 MR. WARD: Object to the form. He can answer it 09:43:31</p> <p>13 any way he wants. 09:43:35</p> <p>14 BY MR. TUCKER: 08:48:09</p> <p>15 Q. Can that question be answered yes or no? 08:48:09</p> <p>16 A. It's more complex. It's not really a -- it's not 09:43:38</p> <p>17 really a "it's this or this." You presented to me -- you're 09:43:43</p> <p>18 defining or limited the definition to objective data to a 09:43:52</p> <p>19 select set of laboratory values. 09:43:56</p> <p>20 Q. Let me put it this way with regard to Mr. Cardenas: 09:43:58</p> <p>21 As I understand what you've got is you've got a guy who was in 09:43:59</p> <p>22 the industrial park where there was an accidental escape of 09:44:03</p> <p>23 arsine? 09:44:06</p> <p>24 A. Yes, sir. 09:44:06</p> <p>25 Q. And he was in the direction at which the wind was 09:44:07</p>
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<p>1 scientist that tries to answer things in a more precise 09:41:16</p> <p>2 manner. 09:41:19</p> <p>3 Q. Let me ask it another way: If you take 09:41:19</p> <p>4 Dr. Harrison's testimony as true, and we're talking about 09:41:24</p> <p>5 hematuria and not hemoglobinuria in Mr. Cardenas, we have no 09:41:27</p> <p>6 elevated plasma free hemoglobin, we have no evidence of 09:41:33</p> <p>7 anemia, we have no abnormalities of haptoglobin, and according 09:41:38</p> <p>8 to Dr. Harrison, we have no hemoglobinuria, if those are the 09:41:44</p> <p>9 medical findings in this case, assuming those were true, is 09:41:49</p> <p>10 there any objective finding in Mr. Cardenas of any exposure to 09:41:54</p> <p>11 arsine? 09:42:00</p> <p>12 MR. WARD: Object to the form. 09:42:00</p> <p>13 A. Two things. One, I don't -- the problem with this 09:42:01</p> <p>14 data set is you're in the emergency room, they didn't actually 09:42:11</p> <p>15 measure free hemoglobin in the plasma. That was a 09:42:15</p> <p>16 determination that wasn't made. That was when you were asking 09:42:19</p> <p>17 me what is the normative range. That was one of the issues 09:42:22</p> <p>18 that I reinforced. But be that as it may, the second is as 09:42:25</p> <p>19 you posit it, there would not be laboratory data presented in 09:42:36</p> <p>20 that situation to support it. 09:42:41</p> <p>21 BY MR. TUCKER: 08:48:09</p> <p>22 Q. Okay. And as a toxicologist, do you normally go 08:48:09</p> <p>23 about making diagnoses when none of the objective data 09:42:48</p> <p>24 supports the diagnoses? 09:42:53</p> <p>25 A. As a toxicologist, I don't make diagnoses. 09:42:54</p>	<p>1 blowing? 09:44:13</p> <p>2 A. The building he was in, yes, sir. 09:44:13</p> <p>3 Q. All right. He went to the hospital, correct? 09:44:15</p> <p>4 A. Yes, sir. 09:44:22</p> <p>5 Q. Upon evaluation at the hospital he made no 09:44:22</p> <p>6 complaints? 09:44:28</p> <p>7 A. Are you waiting for me confirm that? 09:44:33</p> <p>8 Q. Yes. Upon arrival at the hospital and interviewed 09:44:35</p> <p>9 by the intake people, he made no physical complaints? 09:44:40</p> <p>10 A. No physical complaints, yes, sir. 09:44:43</p> <p>11 Q. He was given blood tests and urine tests? 09:44:43</p> <p>12 A. He was given a range of standard blood and urine, 09:44:49</p> <p>13 yes, sir. 09:44:52</p> <p>14 Q. During the time he was at the hospital? 09:44:52</p> <p>15 A. Yes, sir. 09:44:54</p> <p>16 Q. None of those blood tests or urine tests were 09:44:55</p> <p>17 abnormal, insofar as looking for indicators for exposure to 09:44:59</p> <p>18 arsine? 09:45:06</p> <p>19 A. None of the things that were measured with the 09:45:06</p> <p>20 possible exception of that there was hemoglobin of some form 09:45:10</p> <p>21 in the urine. You got a positive dipstick that would be 09:45:15</p> <p>22 associated with -- that were abnormal, yes. 09:45:19</p> <p>23 Q. Which Dr. Harrison said was not hemoglobinuria, 09:45:23</p> <p>24 right? 09:45:32</p> <p>25 MR. WARD: Are you asking whether he agrees with 09:45:32</p>

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<p>1 Dr. Harrison or whether that's what Dr. Harrison said? 09:45:32</p> <p>2 BY MR. TUCKER: 08:48:09</p> <p>3 Q. That's what Dr. Harrison found, right? 08:48:09</p> <p>4 MR. WARD: Object to the form. 09:45:34</p> <p>5 A. Please ask your question again. 09:45:34</p> <p>6 BY MR. TUCKER: 08:48:09</p> <p>7 Q. And Dr. Harrison found that that was not 08:48:09</p> <p>8 hemoglobinuria, it was hematuria, correct? 09:45:40</p> <p>9 A. Dr. Harrison's opinion was that based on the 09:45:43</p> <p>10 presence of microscopic red blood cells, yes, sir, of 02. 09:45:47</p> <p>11 Q. So what is the fact that you base your opinion on 09:45:52</p> <p>12 that this man had a significant — he was exposed to a 09:46:02</p> <p>13 significant amount of arsine and has medical problems that are 09:46:08</p> <p>14 due to that exposure? 09:46:12</p> <p>15 A. The problems he reports are consistent with what you 09:46:13</p> <p>16 would see with arsine exposure or with, in one form or 09:46:19</p> <p>17 another, that in the absence of any measured — measurement of 09:46:26</p> <p>18 what air levels may have been at the time, he was in a place 09:46:32</p> <p>19 where he would have had an opportunity, a good opportunity to 09:46:37</p> <p>20 be exposed to prevailing winds and so forth, as much as we 09:46:42</p> <p>21 know them; that he reports a garlic odor. 09:46:48</p> <p>22 Q. Odor or taste? 09:46:56</p> <p>23 A. Actually, he reports odor. When I looked again in 09:46:58</p> <p>24 the emergency room report, it says "garlic odor." 09:47:02</p> <p>25 Q. Okay. Garlic odor. 09:47:05</p>	<p>1 absence of information, you infer a positive result would have 09:48:52</p> <p>2 been present; is that correct? 09:48:56</p> <p>3 A. No, sir. I'm trying to get a quote, and I shouldn't 09:48:58</p> <p>4 do the quote. I should just answer the question. I'm just 09:49:05</p> <p>5 saying I just don't know. No one knows. We don't have that 09:49:09</p> <p>6 information. 09:49:13</p> <p>7 Q. Well, are there other blood indicators besides 09:49:13</p> <p>8 plasma free hemoglobin? 09:49:17</p> <p>9 A. There are a number of things that may be affected. 09:49:19</p> <p>10 Q. What is haptoglobin? 09:49:22</p> <p>11 A. Haptoglobin is something you will get — you will, 09:49:23</p> <p>12 in fact, get an elevation of or you can get an elevation of 09:49:31</p> <p>13 with arsine exposure. 09:49:47</p> <p>14 Q. What's the mechanism by which haptoglobin is 09:49:48</p> <p>15 elevated? 09:49:53</p> <p>16 A. It's the same in terms of rupture of red blood 09:49:55</p> <p>17 cells. 09:50:02</p> <p>18 Q. What is haptoglobin? 09:50:02</p> <p>19 A. Haptoglobin is a form, a modified form of the 09:50:03</p> <p>20 hemoglobin molecule cluster therein. 09:50:08</p> <p>21 Q. And you're telling me that after the red blood cell 09:50:11</p> <p>22 ruptures and the plasma free hemoglobin goes up, or goes down, 09:50:14</p> <p>23 rather — no, it goes up — the cell ruptures and the plasma 09:50:20</p> <p>24 free hemoglobin goes up, you're telling me that haptoglobin 09:50:24</p> <p>25 also goes up? 09:50:27</p>
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<p>1 A. And that we don't have measurements of blood arsenic 09:47:07</p> <p>2 or arsine levels at those points, so we just don't know about 09:47:20</p> <p>3 those things. And those, I think more probable than not are 09:47:25</p> <p>4 consistent with having either acute or chronically significant 09:47:30</p> <p>5 exposure, and exposure that may be causative or likely to be 09:47:34</p> <p>6 causative. 09:47:40</p> <p>7 Q. Even though you have zero tests that would ever 09:47:41</p> <p>8 indicate that he had ever been exposed to arsine? 09:47:44</p> <p>9 A. Even though you have in the limited group of tests 09:47:48</p> <p>10 that were done — let's go back to the fact that no one 09:47:51</p> <p>11 measured, for example. And why it wasn't done is an 09:47:54</p> <p>12 interesting — it's not interesting; I'm just saying it wasn't 09:47:58</p> <p>13 done because it's not part of the standard. No one measured 09:48:02</p> <p>14 plasma free hemoglobin. It's not in the records. 09:48:05</p> <p>15 Q. Do you know how those hospitals report plasma free 09:48:10</p> <p>16 hemoglobin? 09:48:14</p> <p>17 A. You would do a — you would have to do a special 09:48:14</p> <p>18 test because it's not part of the standard medical screen and 09:48:19</p> <p>19 it wasn't done. 09:48:22</p> <p>20 Q. I think I understand what you're saying. You did 09:48:23</p> <p>21 say, however, that you would expect the blood work more likely 09:48:35</p> <p>22 than not to show plasma free hemoglobin elevated? 09:48:38</p> <p>23 A. Yes, sir, if it was done at the right times, yes, 09:48:42</p> <p>24 sir. 09:48:45</p> <p>25 Q. And so we have no positive information, but from the 09:48:45</p>	<p>1 A. You'll see an — if you — one of the things you may 09:50:28</p> <p>2 see with arsine exposure is an increase in haptoglobin levels. 09:50:32</p> <p>3 Q. Can you direct me to any literature that says when 09:50:37</p> <p>4 plasma free hemoglobin goes up in an individual that 09:50:42</p> <p>5 haptoglobin goes up too? 09:50:45</p> <p>6 A. Not necessarily, no, sir. It's one of the things — 09:50:47</p> <p>7 it's an indicator. 09:50:53</p> <p>8 Q. Do you know what the relationship is between 09:50:54</p> <p>9 haptoglobin and plasma free hemoglobin? 09:50:57</p> <p>10 A. Let me refresh myself. I don't know where anything 09:51:00</p> <p>11 is. I'm looking for my report. 09:51:11</p> <p>12 MS. SMITH: It's back there. Your 12/30 report is 09:51:18</p> <p>13 Number 12. 09:51:36</p> <p>14 (The witness reviewed documents from 9:52 a.m. to 09:51:36</p> <p>15 9:54 a.m.) 09:51:36</p> <p>16 BY MR. TUCKER: 09:53:35</p> <p>17 Q. Did you find it in your report, sir? 09:53:35</p> <p>18 A. No, sir, give me a chance. 09:53:38</p> <p>19 Q. Let me shortcut it for you. This notebook contains 09:53:40</p> <p>20 articles that we're advised by your attorney that you relied 09:53:44</p> <p>21 upon also. First article that I have here, I'll just show it 09:53:48</p> <p>22 to you to look at, "Sequence of Toxic Events in Arsine Induced 09:53:54</p> <p>23 Hemolysis In Vitro: Implications for the Mechanism of 09:54:05</p> <p>24 Toxicity in Human Erythrocytes." That's one of the articles 09:54:11</p> <p>25 that appeared in the what? 09:54:14</p>

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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

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<p>1 A. That's FAT, Fundamental and Applied Tox. 09:54:16</p> <p>2 Q. So do you recognize and accept it's source of 09:54:19</p> <p>3 information? 09:54:23</p> <p>4 A. That's a recognized journal in the field, yes, sir. 09:54:24</p> <p>5 Q. I think I showed you the wrong magazine. Look at 09:54:27</p> <p>6 that one instead. What is that one? 09:54:37</p> <p>7 A. This is Environmental and Occupational Medicine. 09:54:43</p> <p>8 This is Dr. Rael. 09:54:47</p> <p>9 Q. Is that a recognized and established peer-reviewed 09:54:49</p> <p>10 type article? 09:54:52</p> <p>11 A. Yes, sir. 09:54:53</p> <p>12 Q. What's that about? 09:54:53</p> <p>13 A. Well, unfortunately, we're minus the title pages. 09:54:56</p> <p>14 We only have a couple of pages from the article. 09:55:02</p> <p>15 Q. This is what was provided to us. 09:55:05</p> <p>16 A. Okay. 09:55:08</p> <p>17 MR. WARD: Object to the sidebar -- 09:55:10</p> <p>18 BY MR. TUCKER: 09:55:12</p> <p>19 Q. Let me show you Page 94 -- 09:55:12</p> <p>20 MR. WARD: -- move to be stricken. 09:55:18</p> <p>21 BY MR. TUCKER: 09:55:12</p> <p>22 Q. -- of that article, sir. See if this helps explain 09:55:12</p> <p>23 to you the process and relationship between haptoglobin and 09:55:27</p> <p>24 hemoglobin. 09:55:30</p> <p>25 A. Let me see if it refreshes my memory. Okay. 09:55:31</p>	<p>1 would like to know the most. 09:57:38</p> <p>2 Q. Haptoglobin is an indicator? 09:57:39</p> <p>3 A. That would be an indicator. 09:57:41</p> <p>4 Q. Hemoglobin levels are going to go down? 09:57:43</p> <p>5 A. Which hemoglobin levels? 09:57:45</p> <p>6 Q. Hemoglobin period, red blood cells; it's going to go 09:57:48</p> <p>7 down, right? 09:57:51</p> <p>8 A. But not plasma free hemoglobin? 09:57:52</p> <p>9 Q. Just plain old hemoglobin. When you test for 09:57:54</p> <p>10 hemoglobin at the laboratory, when they do a hemoglobin test, 09:57:57</p> <p>11 they're telling you the amount of red blood cells, aren't 09:58:00</p> <p>12 they? 09:58:04</p> <p>13 A. They're measuring basically the concentration in red 09:58:04</p> <p>14 blood cells, yes, sir. 09:58:09</p> <p>15 Q. All right. And hematocrit is another indicator, 09:58:09</p> <p>16 isn't it? 09:58:15</p> <p>17 A. Yes, sir. 09:58:15</p> <p>18 Q. Hematocrit goes down? 09:58:16</p> <p>19 A. It can. 09:58:19</p> <p>20 Q. What you would expect is hematocrit to go down, 09:58:19</p> <p>21 hemoglobin to go down, plasma free hemoglobin to go up and 09:58:23</p> <p>22 haptoglobin to go down? 09:58:27</p> <p>23 A. In a perfect data set, yes, sir, at the right times 09:58:29</p> <p>24 and the right places. 09:58:32</p> <p>25 Q. Okay. Looking at Mr. Cardenas, let's look at his 09:58:33</p>
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<p>1 Q. Does that explain the relationship between 09:56:23</p> <p>2 haptoglobin and plasma free hemoglobin? 09:56:31</p> <p>3 A. Yes, sir. 09:56:33</p> <p>4 Q. What does it say that happens? 09:56:34</p> <p>5 A. "As hemoglobin binds with haptoglobin, the 09:56:36</p> <p>6 concentration of the latter declines and is frequently 09:56:40</p> <p>7 absent." So you would expect a decline in this case if you 09:56:43</p> <p>8 have plasma free. 09:56:47</p> <p>9 Q. And not an increase; is that correct? 09:56:48</p> <p>10 A. Yes, sir. 09:56:50</p> <p>11 Q. You understand that's because haptoglobin and plasma 09:56:50</p> <p>12 free hemoglobin have sort of a relationship? 09:56:54</p> <p>13 A. If you have increased hemoglobin available to bind 09:56:56</p> <p>14 with, it's going to remove haptoglobin from the system. 09:56:59</p> <p>15 Q. All right. Now there are other indicia besides 09:57:03</p> <p>16 plasma free hemoglobin in the blood work, aren't there? 09:57:11</p> <p>17 A. I'm sorry? 09:57:13</p> <p>18 Q. There are other indicia besides plasma free 09:57:14</p> <p>19 hemoglobin and haptoglobin? 09:57:18</p> <p>20 A. Indicia? 09:57:21</p> <p>21 Q. Yeah, I-N-D-I-C-I-A. Indicators? 09:57:22</p> <p>22 A. Indicators, okay. 09:57:23</p> <p>23 Q. There's plasma free hemoglobin, right? That's one 09:57:26</p> <p>24 indicator? 09:57:34</p> <p>25 A. That's one of the things -- that's the one thing you 09:57:34</p>	<p>1 hemoglobin and hematocrit levels as tested by the laboratory 09:58:37</p> <p>2 from the Tulsa Regional lab, and what are the normal ranges 09:58:42</p> <p>3 shown for hemoglobin? 09:58:49</p> <p>4 A. Well, the reference range is 12.3 to 17 grams per 09:58:51</p> <p>5 deciliter. 09:58:56</p> <p>6 Q. Where did Mr. Cardenas fit? 09:58:56</p> <p>7 A. High end of the 16, 17 when he came in. 09:58:58</p> <p>8 Q. The high end of it? 09:59:02</p> <p>9 A. Yes, sir. 09:59:04</p> <p>10 Q. Now, yesterday you told us that when somebody had 09:59:04</p> <p>11 been exposed to arsine, you would expect their hemoglobin to 09:59:10</p> <p>12 be below 10 grams per milliliter. Do you remember that? 09:59:14</p> <p>13 A. Yes, sir. I said if you measured it at the right 09:59:18</p> <p>14 point. 09:59:21</p> <p>15 Q. So the only measurement that we have, which was the 09:59:21</p> <p>16 one that was taken by the hospital, the people providing the 09:59:24</p> <p>17 medical care for this man, shows 16.7 and not less than 10; is 09:59:28</p> <p>18 that correct? 09:59:35</p> <p>19 A. I'm sorry? Not less than 10? 09:59:35</p> <p>20 Q. It doesn't show less than 10, does it? 09:59:40</p> <p>21 A. I'm sorry. No, sir. 09:59:43</p> <p>22 Q. It shows Mr. Cardenas to be perfectly normal, 09:59:46</p> <p>23 doesn't it? 09:59:48</p> <p>24 A. It shows that -- 09:59:49</p> <p>25 MR. WARD: Object to the form. 09:59:52</p>

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1 A. At the time measured, Mr. Cardenas's hemoglobin 09:59:53  
 2 level in his blood cells was in the normal reference range. 09:59:58  
 3 BY MR. TUCKER: 09:55:12  
 4 Q. What's the normal reference range for hematocrit? 09:55:12  
 5 A. Between 36.2 and 50 for this facility. 10:00:06  
 6 Q. What was the finding for Mr. Cardenas? 10:00:10  
 7 A. 48.4. 10:00:13  
 8 Q. Again, within the normal range? 10:00:14  
 9 A. Yes, sir. 10:00:16  
 10 Q. And not only in the normal range, but it's also 10:00:16  
 11 high, isn't it? 10:00:20  
 12 A. It's at the upper end of that range. 10:00:22  
 13 Q. And that's good, isn't it? 10:00:25  
 14 A. That's good. 10:00:26  
 15 Q. Sure. If we're looking for a blood chemistry that's 10:00:29  
 16 going to drop if you've been exposed to arsine, then you 10:00:32  
 17 really would like to see something in the high-normal range 10:00:36  
 18 rather than the low-normal range, wouldn't you? 10:00:40  
 19 A. In terms of toxicity, you would rather your values 10:00:42  
 20 be in the normal range, yes, sir. 10:00:48  
 21 Q. And the high end indicates that he doesn't appear to 10:00:49  
 22 have had a whole lot of reactions from anything that would 10:00:52  
 23 affect his hemoglobin or his hematocrit levels, does it? 10:00:56  
 24 A. What you don't know -- I'm going to say it again. 10:01:01  
 25 What you don't know, and you would have to look at the -- I 10:01:07

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1 man's medical records and blood tests are that the man has 10:02:39  
 2 nothing in any of his records to indicate any exposure to 10:02:43  
 3 arsine; isn't that correct? 10:02:47  
 4 MR. WARD: Object to the form. 10:02:51  
 5 BY MR. TUCKER: 10:02:52  
 6 Q. In any of his medical tests? 10:02:52  
 7 A. In the laboratory tests that were performed on the 10:02:55  
 8 samples that were drawn are not -- don't support, in fact, 10:02:58  
 9 such an exposure. 10:03:06  
 10 Q. And you're saying it's possible that if he had been 10:03:06  
 11 tested at some other time, that those laboratory tests might 10:03:09  
 12 have shown some different result that might show that he might 10:03:14  
 13 have been exposed to arsine sufficiently to affect those 10:03:17  
 14 results? 10:03:21  
 15 A. Yes, sir. Or if someone had measured -- if someone 10:03:21  
 16 had measured plasma free hemoglobin, if we had done different 10:03:25  
 17 measurements at different times -- again, we only know where 10:03:32  
 18 we look. The response -- the literature is quite clear; the 10:03:35  
 19 response time to an arsine exposure in terms of changes in the 10:03:40  
 20 hemogram is very variable. It can be a few hours. It can be 10:03:49  
 21 days. 10:03:56  
 22 Q. So these other tests weren't taken? 10:03:59  
 23 A. No, sir. 10:04:06  
 24 Q. So for me to say what they would have shown or for 10:04:06  
 25 you to say what they would have shown is really just 10:04:12

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1 remember Mr. Cardenas had a prior physical -- health 10:01:12  
 2 surveillance physical some months before. You would have to 10:01:16  
 3 look at that, and what his normal range is. There is 10:01:20  
 4 variation in individuals. Reference range -- do you know how 10:01:25  
 5 a reference range is defined? 10:01:28  
 6 Q. Yes. 10:01:33  
 7 A. So it covers basically 95 percent, roughly, to the 10:01:34  
 8 population if there is normative health. Some individuals 10:01:38  
 9 will be higher than that; some individuals will be lower. 10:01:41  
 10 What you would really like to know -- and we talked about this 10:01:45  
 11 yesterday, I believe -- what you would really like to know is 10:01:49  
 12 what was -- first of all, was Mr. Cardenas normally at the 10:01:52  
 13 high end? In fact, was Mr. Cardenas normally above the high 10:01:58  
 14 end of the range? 10:02:03  
 15 Q. Do you know the answer to that? 10:02:04  
 16 A. No, sir, not off the top. That's an unknown. When 10:02:05  
 17 you ask the science question, it's a matter of -- this is why 10:02:09  
 18 I keep saying a change in the individual levels. 10:02:15  
 19 Q. Science is a matter of observing facts and reaching 10:02:21  
 20 conclusions; isn't that right? 10:02:27  
 21 A. Yes, sir. 10:02:29  
 22 Q. And science is not for speculation; isn't that 10:02:29  
 23 correct? 10:02:34  
 24 A. Yes, sir. 10:02:34  
 25 Q. The only observable fact we have with regard to this 10:02:34

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1 speculation, isn't it? 10:04:15  
 2 A. No one can address whether we have that information 10:04:16  
 3 or what that information would be, yes, sir. 10:04:18  
 4 Q. And yesterday you told us it wasn't days, you said 10:04:21  
 5 2 to 24 hours. Do you remember that? 10:04:24  
 6 A. It's usually 2 to 24 hours, but it can also be 10:04:25  
 7 longer. 10:04:28  
 8 Q. And the literature that we read from yesterday said 10:04:28  
 9 "2 to 24 hours," didn't it? 10:04:31  
 10 A. Well, it said "2 to 24," but it also says in some 10:04:32  
 11 cases it's longer. It also says in some cases you may not see 10:04:34  
 12 it. 10:04:37  
 13 Q. It says you may not see it. Did it say in some 10:04:37  
 14 cases you might find it later after 24 hours? 10:04:41  
 15 A. Yes, sir. 10:04:44  
 16 Q. Did the article say that? 10:04:45  
 17 A. The literature says that, yes. 10:04:47  
 18 Q. Is that the one we looked at yesterday? 10:04:48  
 19 A. I don't recollect at the moment, sir. 10:04:50  
 20 Q. In your opinion you say that you believe 10:05:02  
 21 Mr. Cardenas had a -- was exposed to a significant amount of 10:05:04  
 22 arsine. Is there any literature you know of say that you can 10:05:08  
 23 have exposure to a significant amount of arsine without having 10:05:14  
 24 hemolytic reactions that would be observed in a blood test? 10:05:19  
 25 MR. WARD: Object to the form. 10:05:24

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1 A. Yes. If you define a significant amount as one that 10:05:25  
 2 may have a health effect, which is the question before us. In 10:05:29  
 3 fact, there is literature that says you may not see effects in 10:05:34  
 4 the blood, particularly in individual blood tests, and still 10:05:39  
 5 have health effects. 10:05:44  
 6 BY MR. TUCKER: 10:05:46  
 7 Q. And that would be in one of your chronic exposures? 10:05:46  
 8 A. That would be typically in a chronic exposure that 10:05:51  
 9 would be lower levels of exposures over an extended period of 10:05:58  
 10 time. 10:06:03  
 11 Q. Let me hand you Exhibit 70, which is your Dart work 10:06:03  
 12 you referred to yesterday as authoritative? 10:06:09  
 13 A. Yes, sir. 10:06:11  
 14 Q. I want you to turn to that page which is 1397. Read 10:06:12  
 15 the part that's underlined there for me, would you. Tell me 10:06:21  
 16 if you agree with it after you read it. 10:06:25  
 17 A. "Chronic, low-dose exposure to arsine gas has been 10:06:27  
 18 associated with anemia, which is proportional to the duration 10:06:31  
 19 of exposure." 10:06:35  
 20 Q. In any of these 13 folks, with the exception of the 10:06:35  
 21 lady who was pregnant -- in any of these 13 folks, was there 10:06:41  
 22 any finding of anemia at any time in their medical records in 10:06:45  
 23 2001, '2, '3, or '4? 10:06:51  
 24 A. I would have to go back and review everything that's 10:06:54  
 25 on the CD to answer the question the way you ask it. 10:06:57

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1 people showed any evidence of anemia except the pregnant lady, 10:08:19  
 2 does that permit you to rule in chronic exposure to arsine? 10:08:23  
 3 MR. WARD: Object to the form. 10:08:28  
 4 A. For the hypothetical, for the 13 individuals here, 10:08:29  
 5 if, in fact, hypothetically there was no indication of anemia 10:08:42  
 6 or an anemic precluding effect at any of the times measured, 10:08:46  
 7 that would not allow you to answer the question the way you 10:08:54  
 8 asked. That would not allow you to rule in to say "Well, yes, 10:08:59  
 9 that establishes that there was arsine exposure." 10:09:03  
 10 BY MR. TUCKER: 10:09:06  
 11 Q. I'm not being critical, you understand, sir, but as 10:09:06  
 12 you observed to us yesterday, your file was a little bit in 10:09:34  
 13 disarray yesterday. 10:09:37  
 14 A. Yes, sir. 10:09:40  
 15 Q. Ms. Smith went through and put your file in order. 10:09:42  
 16 She put each plaintiff in alphabetical order and all of the 10:09:45  
 17 records and statements regarding each plaintiff, and then she 10:09:49  
 18 made a list of everything that's in your file which I've 10:09:52  
 19 marked here as Defendant's Exhibit 72. Therefore, during the 10:09:57  
 20 day, if you need to look at any documents -- 10:10:03  
 21 A. This would be helpful. 10:10:07  
 22 Q. Yes. Now, yesterday you told me you had affidavits 10:10:09  
 23 from the 13 plaintiffs about their continued exposure to 10:10:12  
 24 arsine; do you recall that? 10:10:15  
 25 A. I did say I thought I had that, yes, sir. 10:10:17

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1 Q. Let me ask it this way: If we were to go through 10:07:01  
 2 the CD and find there is no anemia for anybody except the lady 10:07:04  
 3 who was pregnant, and we understand why she is anemic -- 10:07:10  
 4 MR. WARD: Object to the form, the sidebar 10:07:11  
 5 comment. 10:07:13  
 6 A. Please ask your question. 10:07:15  
 7 BY MR. TUCKER: 09:55:12  
 8 Q. With the exception of the lady who was pregnant, and 09:55:12  
 9 we don't have any evidence of any anemia in any of these 10:07:20  
 10 folks, any of them, can't we rule out this concept of chronic 10:07:26  
 11 exposure? 10:07:29  
 12 A. You can't rule it out, but you would think that it 10:07:30  
 13 would be less likely. Okay? The words, again, "chronic, 10:07:35  
 14 low-dose exposure to arsine has been associated" -- not 10:07:40  
 15 necessarily. 10:07:44  
 16 Q. With respect to Mr. Cardenas, are you saying his 10:07:45  
 17 problem is as a result of an acute exposure or a chronic 10:07:48  
 18 exposure? 10:07:56  
 19 A. His problem may be associated -- we don't have the 10:07:56  
 20 data to be able to dissect that, is the bottom line. 10:07:59  
 21 Q. And you talked about "There's chronic exposure with 10:08:02  
 22 13 people, with the exception of the pregnant lady, who have 10:08:06  
 23 no evidence of anemia at any time" -- assume that to be so, 10:08:09  
 24 because I don't want to ask you to take the time to read 10:08:14  
 25 through the CD -- assuming that's so, that none of these 13 10:08:16

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1 Q. Now, I would tell you that -- I'll represent that 10:10:20  
 2 Ms. Smith went through your entire file and listed everything 10:10:23  
 3 and did not find one affidavit from any of the 13 -- any 10:10:26  
 4 affidavit from any of the 13 plaintiffs. 10:10:32  
 5 A. Yes, sir. 10:10:34  
 6 Q. So are there some affidavits that are not in your 10:10:35  
 7 filing? 10:10:40  
 8 A. Unless -- 10:10:40  
 9 THE WITNESS: Did you check the CD-ROM? 10:10:43  
 10 MS. SMITH: Not today, but I have. 10:10:49  
 11 THE WITNESS: Because I haven't looked at that. 10:10:51  
 12 I'm asking for -- 10:10:53  
 13 MR. TUCKER: Isn't the CD-ROM just medical 10:10:56  
 14 records? 10:10:59  
 15 THE WITNESS: I think actually it is, but I'm 10:11:01  
 16 asking for verification at this point. 10:11:06  
 17 MS. SMITH: I printed it all out and there are no 10:11:13  
 18 any affidavits. 10:11:20  
 19 BY MR. TUCKER: 09:55:12  
 20 Q. My question is: What was that testimony about 09:55:12  
 21 yesterday that you had 13 affidavits? 10:11:25  
 22 A. As I said yesterday, I believe, that in fact -- 10:11:28  
 23 the -- I was mistaken that the affidavits I have are not from 10:11:37  
 24 those individuals. 10:11:41  
 25 Q. The two affidavits that you do have -- 10:11:41

12 (Pages 217 to 220)



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1 A. -- or support of one witness, as it were. 10:11:44  
 2 Q. The two affidavits that you do have are affidavits 10:11:47  
 3 that weren't even prepared until after your first report; 10:11:50  
 4 isn't that right? 10:11:53  
 5 A. No, sir. There are affidavits. They're just not 10:11:54  
 6 from these individuals. 10:12:01  
 7 Q. I said the two that you have weren't even prepared 10:12:02  
 8 until after your first report; isn't that correct? 10:12:06  
 9 MR. WARD: Are you talking about the affidavits 10:12:09  
 10 that -- 10:12:09  
 11 BY MR. TUCKER: 09:55:12  
 12 Q. The two affidavits that Ms. Smith is now handing you 09:55:12  
 13 from your file that are marked as Exhibits 4 and 6? 10:12:18  
 14 MR. WARD: We'll stipulate that they're dated 10:12:24  
 15 after his report. 10:12:28  
 16 A. Yes, sir. 10:12:29  
 17 MR. WARD: After his first report. 10:12:34  
 18 A. After the first and prior to the second. 10:12:39  
 19 BY MR. TUCKER: 09:55:12  
 20 Q. Would you like to get in your alphabetical stack and 09:55:12  
 21 pull up Ms. Castro. I would also like you to pull up the map 10:12:46  
 22 that shows where the folks were located during this incident. 10:12:55  
 23 When you get those, sir, I would like you to identify where 10:13:26  
 24 Ms. Castro was located on the date of the accident on July 10:13:30  
 25 11th, 2001. 10:13:35

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1 A. I'm sorry? 10:15:34  
 2 Q. You're just assuming that there would have been a 10:15:39  
 3 plume that would have spread that wide by that point? 10:15:42  
 4 A. One would expect you would have some dispersion, 10:15:45  
 5 yes, sir. 10:15:49  
 6 Q. And as it spreads it dilutes; isn't that right? 10:15:49  
 7 A. If, in fact, the wind, as reported as the day we do 10:15:53  
 8 have, was north, northwest -- 10:15:57  
 9 Q. To the north, northwest. 10:15:57  
 10 A. To the north, northwest, coming out from the south, 10:15:59  
 11 southeast, one would expect that a plume would go -- would 10:16:01  
 12 cover north, northwest, it would sort of shift as the wind 10:16:06  
 13 might shift. And as the wind shifted, the lower the wind 10:16:10  
 14 speed -- and we're talking relatively low wind speeds here -- 10:16:15  
 15 the wider the dispersion, so yes, sir. 10:16:19  
 16 Q. As it's dispersed it becomes less concentrated, 10:16:21  
 17 right? 10:16:26  
 18 A. Yes, sir. 10:16:26  
 19 Q. Do you have any opinion as to what -- if a plume 10:16:26  
 20 reached Motor Guide, what the concentration of arsine, if 10:16:30  
 21 there was arsine left after the exothermic reaction, would be? 10:16:31  
 22 A. Without measuring data, there would be no way to 10:16:33  
 23 tell. 10:16:37  
 24 Q. And we don't have either of those; is that right? 10:16:41  
 25 A. No, sir. 10:16:50

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1 A. Okay. Yes, sir. 10:13:37  
 2 Q. Where was she located? 10:14:17  
 3 A. Almost due north -- a little bit east of due north 10:14:19  
 4 of the Solkatronic facility. 10:14:29  
 5 Q. So she's out of that northwest corridor that the 10:14:30  
 6 direction the wind appears to have been blowing; is that 10:14:35  
 7 correct? 10:14:39  
 8 MR. WARD: Object to the form. It's not 10:14:39  
 9 consistent with the evidence. 10:14:41  
 10 A. No, sir. 10:14:42  
 11 BY MR. TUCKER: 09:55:12  
 12 Q. She's in the northeast corridor, isn't she? 09:55:12  
 13 A. She's about five degrees, oh, due north. We're 10:14:45  
 14 talking north, northwest, so she would be in a place where I 10:14:51  
 15 would expect the plume would extend, fairly close to it. 10:14:57  
 16 She's between the Solkatronic's facility and the Motor Guide 10:15:02  
 17 Marine Facility. 10:15:13  
 18 Q. And where is the Motor Guide Facility? Put your 10:15:16  
 19 finger on it, please. 10:15:18  
 20 A. Right there (indicating). 10:15:21  
 21 Q. How far away is that? 10:15:21  
 22 A. Again, we don't have a scale, but it's -- the next 10:15:21  
 23 one in the park. 10:15:26  
 24 Q. And you're assuming that a plume would have spread 10:15:27  
 25 that wide? 10:15:33

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1 Q. So Ms. Castro, did she go to the hospital and get 10:16:51  
 2 looked at? Looking at your medical records for Ms. Castro, do 10:17:00  
 3 you find a record of her being decontaminated on the date of 10:18:11  
 4 the accident? 10:18:16  
 5 A. I'm reviewing the stuff now in order to do that. 10:18:17  
 6 Q. All right. 10:18:20  
 7 A. On the day of the incident she was not taken to a 10:22:00  
 8 medical facility. She did go to an emergency room, but three 10:22:06  
 9 days later. 10:22:14  
 10 Q. On the 14th; is that right? 10:22:15  
 11 A. Yes, sir, that's correct. 10:22:17  
 12 Q. And when she went to the emergency room, did she 10:22:18  
 13 have blood work and urine work? 10:22:21  
 14 A. I believe so, but let me check. Yes, sir. 10:22:24  
 15 Q. And were any of those blood or urine tests other 10:23:11  
 16 than normal? Are those all normal test results? 10:23:16  
 17 A. They all appear to be in normative range, yes, sir. 10:23:21  
 18 Q. So there is nothing in her laboratory work two days 10:23:25  
 19 after the incident on July 11th that would indicate any 10:23:28  
 20 exposure to arsine, is that right? 10:23:31  
 21 A. Yes, sir. 10:23:34  
 22 Q. When she arrived, did she give a history? 10:23:34  
 23 A. Yes, sir. 10:23:37  
 24 Q. When she gave that -- are you familiar with the 10:23:39  
 25 phrase, the so-called "classic triad" of symptoms of arsine 10:23:44

13 (Pages 221 to 224)



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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

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1 exposure? 10:23:48  
 2 A. We're now dealing with a lot of fatigue. I'm sorry. 10:23:49  
 3 Q. Well, let's work on it together. You're familiar 10:23:54  
 4 there is a classic triad? Basically, that's kind of a dark or 10:23:55  
 5 red urine, abdominal pain and jaundice, right? That's a 10:24:01  
 6 so-called classic triad for diagnosis, right? 10:24:09  
 7 A. Yes, sir. Those are the three things you would 10:24:11  
 8 commonly see at a high acute exposure. 10:24:14  
 9 Q. And that's referred to as a "classic triad," right? 10:24:14  
 10 A. I believe so, sir. 10:24:18  
 11 Q. Would you look at her history and see if she makes 10:24:19  
 12 any complaint of abdominal pain, jaundice or peeing red? 10:24:22  
 13 A. No, sir, not in this. 10:24:30  
 14 Q. When you reviewed the records for Ms. Castro, you 10:25:19  
 15 don't note this on your report, but her records reflect she 10:25:23  
 16 was examined on the morning of July 11th at Tulsa 10:25:27  
 17 Gastroenterology. That's kind of a good thing, isn't it, to 10:25:31  
 18 have an examination just before an event occurs? 10:25:36  
 19 A. Yes, sir. Well, that's a very useful thing, yes. 10:25:38  
 20 Q. At that time she complained of fatigue, bruising, 10:25:42  
 21 left-side pain, fever and chills. That's the same complaint 10:25:45  
 22 she's making three years after this incident, isn't it? 10:25:52  
 23 Fatigue is one of them? Again, I'm meaning three years out of 10:25:55  
 24 your report. 10:26:13  
 25 A. I'm sorry? 10:26:13

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1 Q. She's complaining of fatigue on the day of the 10:26:14  
 2 incident and she complains of fatigue three years later and 10:26:18  
 3 it's in your report that she complains of fatigue. 10:26:22  
 4 A. Yes, sir. 10:26:24  
 5 Q. Now, you attribute that fatigue to arsine exposure 10:26:25  
 6 in your report; isn't that correct? 10:26:30  
 7 A. Well, no, sir. I say I consider it in what I have. 10:26:31  
 8 I have fatigue, numbness, headache, short-term memory loss 10:26:36  
 9 about three years after. She, in fact, had — the fatigue was 10:26:41  
 10 there before and, in fact, consistently through a number of 10:26:47  
 11 these records, so it's really a background. It's there. It's 10:26:51  
 12 one of the signs, but it's not something that one would 10:26:54  
 13 consider here, no. 10:26:58  
 14 Q. In your report you say that "Strikingly, she has 10:26:58  
 15 developed significant kidney problems." 10:27:06  
 16 A. Yes, sir. 10:27:09  
 17 Q. Can you refer me to any information that would 10:27:09  
 18 confirm significant kidney problems? 10:27:13  
 19 I will say to you, sir, that we have searched her 10:27:20  
 20 records, every record that's been provided to us, and every 10:27:22  
 21 record we got from any care provider she's ever had and we 10:27:26  
 22 find no reference to any kidney problems? 10:27:30  
 23 MR. WARD: Object to the sidebar testimony by 10:27:33  
 24 counsel. Move to be stricken. 10:27:36  
 25 10:27:36

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1 BY MR. TUCKER: 10:27:37  
 2 Q. If you can find one, please tell me about it. 10:27:37  
 3 (The witness reviewed records from 10:33 a.m. to 10:33:06  
 4 10:43 a.m.) 10:33:06  
 5 (Off the record) 10:33:19  
 6 A. I don't find anything in these — I am embarrassed 10:33:19  
 7 to find that I don't see anything in these to tell me where I 10:42:38  
 8 came up with that piece of information. 10:42:43  
 9 BY MR. TUCKER: 09:55:12  
 10 Q. That's Ms. Castro's medical record right there? 09:55:12  
 11 A. These are the parts I printed. There's enormous. 10:42:49  
 12 Q. Ms. Smith printed out your entire CD-ROM and went 10:42:54  
 13 through it for each one of the 13 plaintiffs or all of the 10:43:01  
 14 plaintiffs. And with respect to Ms. Castro, she was unable to 10:43:05  
 15 find any reference to significant kidney problems developing 10:43:08  
 16 shortly after the exposure or at any other time. Do you have 10:43:14  
 17 any basis for that that you can think of at this time? 10:43:18  
 18 MR. WARD: Object to the form of the question and 10:43:21  
 19 the sidebar and the testimony. 10:43:23  
 20 A. At this point in time, I'm not sure where that 10:43:25  
 21 particular piece came from. 10:43:31  
 22 BY MR. TUCKER: 10:43:34  
 23 Q. Would you mark down that for me? And when you 10:43:34  
 24 provide that other article you were going to provide me, 10:43:38  
 25 provide me with information that supports that statement. 10:43:43

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1 A. I will look for that. 10:43:45  
 2 Q. Your next sentence about Ms. Castro says "There are 10:43:48  
 3 both records of her evaluation and treatment three days after 10:44:07  
 4 the accident." 10:44:10  
 5 A. Yes, sir. 10:44:10  
 6 Q. We talked about her evaluation. What records are 10:44:11  
 7 there of her treatment? 10:44:13  
 8 A. "Disposition/Plan:" — this is the St. John's 10:44:15  
 9 Medical Center. "Disposition/Plan: Patient was advised there 10:45:04  
 10 were no obvious signs of short-term damage from arsine or any 10:45:08  
 11 hemolysis. She is advised of long-term effect; is not clearly 10:45:12  
 12 known. She is to follow up with her primary-care physician if 10:45:18  
 13 she has any further problems." 10:45:22  
 14 Q. So my question is what treatment did she receive? 10:45:23  
 15 You said that she received an evaluation and treatment. What 10:45:31  
 16 treatment did she receive? 10:45:34  
 17 A. That was the treatment plan. 10:45:35  
 18 Q. She was sent home and told to see her doctor if she 10:45:36  
 19 had any problems, right? 10:45:44  
 20 A. And then if we go from there to Dr. Miller, see 10:45:45  
 21 neurologist — this is Dr. Miller dated June 7, 2002, "Future 10:46:01  
 22 Medical Treatments - My medical opinion that Ms. Linda Castro 10:46:20  
 23 has chronic arsenic intoxication. She should be seen by a 10:46:23  
 24 neurologist for her neurologic complaints. Her short-term 10:46:29  
 25 memory loss and numbness in hands and feet that will not work. 10:46:32

14 (Pages 225 to 228)



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1 She should see a pulmonary specialist for her chronic cough 10:46:37  
 2 and see a nephrologist for her back and kidney pain." That's 10:46:40  
 3 probably where the kidney part came from, by the way. 10:46:43  
 4 Q. And that says that that developed shortly after the 10:46:48  
 5 incident, that kidney pain? 10:46:51  
 6 A. No. This is June 11 months post. 10:46:52  
 7 Q. That's not shortly after, is it? Do you know who 10:46:57  
 8 that doctor is that you're reading from? 10:47:03  
 9 A. No, I've never met him. 10:47:06  
 10 Q. Let me represent to you that Dr. Miller was hired by 10:47:08  
 11 another of Ms. Castro's lawyers that represented her in making 10:47:12  
 12 a workers' compensation claim. So that's the doctor she was 10:47:16  
 13 sent to by her lawyer for her workers' compensation claim as 10:47:19  
 14 opposed to her personal physician. 10:47:23  
 15 A. Okay. I have no knowledge. 10:47:25  
 16 Q. Do you have any information of her making complaints 10:47:26  
 17 to her personal physician as she was directed when she was 10:47:30  
 18 released from the hospital? 10:47:36  
 19 A. And I would go through the record again, but I have 10:47:37  
 20 no recollection, no. 10:47:42  
 21 Q. So as far as actual treatment is concerned, do we 10:47:44  
 22 agree that she does not actually receive any treatment when 10:47:58  
 23 she went to the hospital on the 14th of July? 10:48:03  
 24 A. I just have future treatment plan recommendation 10:48:06  
 25 here. I don't see anything in terms of treatment other than 10:48:09

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1 she should do this and this. 10:48:12  
 2 Q. If you need to do something — if something happens, 10:48:14  
 3 go see your regular doctor, right? 10:48:18  
 4 A. From the St. John's, yes, sir. 10:48:19  
 5 Q. And you don't have any other indications of 10:48:22  
 6 treatment three days after the accident, right? 10:48:27  
 7 A. No, sir, not other than — well, other than what I'm 10:48:29  
 8 seeing here, no, sir. 10:48:34  
 9 Q. What you said was that there — they didn't 10:48:35  
 10 prescribe any medicine for her, did they? 10:48:38  
 11 A. No, sir. 10:48:40  
 12 Q. They didn't give her any medical treatment, 10:48:41  
 13 did they? I mean you read it; it said, "Go see your doctor if 10:48:52  
 14 you have any problems." 10:48:56  
 15 A. Follow up with primary-care physician if she has any 10:48:57  
 16 further problems. Okay. So they did an evaluation and 10:49:15  
 17 suggestion of where to go from there, yes, sir. 10:49:21  
 18 Q. So she did not have any treatment at St. John? 10:49:23  
 19 A. Other than the examination and presenting what she 10:49:30  
 20 should do for future treatment or follow-up, no, sir. 10:49:34  
 21 Q. Now, you say in your report "There are both records 10:49:36  
 22 of her evaluation and treatment three days after the accident 10:49:39  
 23 which are consistent with arsine exposure from the time of the 10:49:43  
 24 accident." But she didn't receive any medical treatment; she 10:49:46  
 25 just got some advice, right? 10:49:50

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1 A. She had an evaluation, yes. 10:49:52  
 2 Q. And her evaluation didn't find anything wrong with 10:49:56  
 3 her, isn't that right? 10:50:00  
 4 A. Well, they didn't find anything that was supportive 10:50:02  
 5 of arsine exposure, yes, sir. 10:50:05  
 6 Q. They didn't give her any treatment or find anything 10:50:08  
 7 supportive of arsine exposure, so how do you say that's 10:50:12  
 8 consistent with arsine exposure from the time of the accident? 10:50:16  
 9 How can you possibly reach that conclusion? 10:50:18  
 10 A. It is, in fact, her complaints as she comes in. 10:50:24  
 11 There's no laboratory measurements that support that in this. 10:50:54  
 12 Q. Well, I want to go back to your statement — 10:50:58  
 13 A. But in this particular case, this is three days 10:51:01  
 14 post. This is before there was any involvement in any legal 10:51:05  
 15 action or anything. 10:51:09  
 16 Q. But with all respect, sir, you're the one that's 10:51:09  
 17 testifying as an expert, so I'm going to ask you questions 10:51:13  
 18 about what you said in your report which is a part of your 10:51:16  
 19 testimony. 10:51:18  
 20 "There are both records of her evaluation and 10:51:19  
 21 treatment three days after the accident which are consistent 10:51:21  
 22 with arsine exposure from the time of the accident." 10:51:25  
 23 The only thing consistent about it is she says — it 10:51:27  
 24 says "She presents with possible exposure to arsine gas." 10:51:31  
 25 Isn't that correct? 10:51:34

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1 A. She reports the taste. 10:51:35  
 2 Q. What taste? 10:51:38  
 3 A. Metallic taste. She reports cough. But that's the 10:51:40  
 4 only part, yes. 10:51:55  
 5 Q. She reports a metallic taste. 10:51:56  
 6 A. Interestingly enough, the part that — she reports 10:52:00  
 7 a smell in the urine that would be nothing to do with arsine. 10:52:04  
 8 It would generally be associated with some ketosis, some 10:52:08  
 9 ketones in the urine. It's a nail polish smell. But, in 10:52:13  
 10 fact, they did look and didn't find that. Negative for ketone 10:52:15  
 11 and ketone bodies. 10:52:20  
 12 Q. What was the taste in her mouth? 10:52:21  
 13 A. Metallic taste. 10:52:24  
 14 Q. Now, what is the taste you told us yesterday you're 10:52:26  
 15 supposed to get from arsine, if you get a taste? 10:52:30  
 16 A. Usually you'll sense it as a garlic taste. 10:52:31  
 17 Q. Do you know of any literature that describes it as a 10:52:33  
 18 metallic odor? 10:52:35  
 19 A. At this time she describes it as a metallic odor. 10:52:35  
 20 Q. Do you know of any literature that would say a 10:52:36  
 21 metallic odor or taste for arsine? 10:52:38  
 22 A. No, sir. 10:52:41  
 23 Q. So I'm trying to figure out, other than what it says 10:52:41  
 24 in here about the fact that she presents with possible 10:52:47  
 25 exposure to arsine gas, what is it about her trip to St. John 10:52:49

15 (Pages 229 to 232)



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July 12, 2005

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1 that says to you "This is consistent with arsine exposure from 10:52:54  
 2 the time of the accident?" 10:53:01  
 3 A. That she, in fact, went on her own, but that's it, 10:53:04  
 4 from what I'm seeing looking at this in front of me now. 10:53:09  
 5 Q. Well, then your next sentence is "It is my best 10:53:13  
 6 professional judgment that Ms. Castro was exposed to a 10:53:20  
 7 significant amount of arsine at the time of the accident." 10:53:23  
 8 What do you base that on? 10:53:26  
 9 A. The entire set of medical records that goes on from 10:53:27  
 10 there. 10:53:36  
 11 Q. And that basically is that she says that she was 10:53:36  
 12 where there was arsine, right? 10:53:40  
 13 A. I'm sorry, sir? 10:53:42  
 14 Q. Can you give me any other fact to support that 10:53:43  
 15 opinion? 10:53:46  
 16 A. No, sir, not from what I'm looking at right now. I 10:53:46  
 17 would have to go back and reestablish how I got this. 10:53:49  
 18 Q. Well, sir, you've testified a whole bunch of times, 10:53:52  
 19 right? 10:53:58  
 20 A. I have testified a number of times, yes, sir. 10:53:58  
 21 Q. And you knew you were going to give your testimony 10:54:01  
 22 today about these 13 people and about your reports, right? 10:54:04  
 23 A. Yes, sir. 10:54:08  
 24 Q. And the last time we had to look for something in 10:54:08  
 25 the medical record, we took a 20-minute break for you to look 10:54:12

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1 Q. And what do you have printed out there? That's 10:55:50  
 2 about an inch thick. 10:55:54  
 3 A. These are copies of a portion of a number of medical 10:55:56  
 4 records. 10:56:01  
 5 Q. How did you choose what to print? 10:56:01  
 6 A. Things that I wanted to look at as I was going 10:56:03  
 7 through initially when I started to review the CD, the 10:56:13  
 8 information of the medical records that were on the CD-ROM. I 10:56:18  
 9 looked at the -- on the earlier people, I was printing more. 10:56:23  
 10 And early on, when I got into it, I became aware of how bulky 10:56:27  
 11 the paper would be. 10:56:32  
 12 Q. Well, when you wrote this report about Ms. Castro, 10:56:35  
 13 the things that were significant to you were the significant 10:56:50  
 14 kidney problems, and you've told me that when she went to the 10:56:53  
 15 hospital she had a taste. We now know that we can't find any 10:56:57  
 16 reports of kidney problems and that the taste she had was a 10:57:04  
 17 metallic taste and not a garlic taste. And you found 10:57:07  
 18 treatment and there wasn't any. 10:57:12  
 19 So is there one fact in this part about Ms. Castro, 10:57:13  
 20 except the fact that she makes complaints, self-reports 10:57:18  
 21 complaints, is there one fact in here that's correct about 10:57:23  
 22 Ms. Castro? 10:57:26  
 23 MR. WARD: Object to the form of the question. 10:57:26  
 24 Mischaracterization of the evidence by counsel. Move 10:57:29  
 25 to strike it. 10:57:32

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1 in your records and not find something that you testified 10:54:18  
 2 about. Did you do anything to review your file to prepare for 10:54:21  
 3 this deposition? 10:54:25  
 4 A. I did not -- I did, sir. But that's almost -- (a) 10:54:27  
 5 I've been out of the country for almost a month at this point, 10:54:33  
 6 and (b) I didn't know until I got back Sunday night, in fact, 10:54:37  
 7 actually until sometime Sunday morning that, in fact, you were 10:54:42  
 8 going to want me to gather these records together. 10:54:47  
 9 Q. You didn't expect to testify about your file as an 10:54:51  
 10 expert? 10:54:54  
 11 A. I expected to testify about my opinions and the data 10:54:54  
 12 therein. But I did not have a chance to review the file at 10:54:58  
 13 that point or print out any additional information, not in the 10:55:02  
 14 space from sometime Sunday morning until when we started at 10:55:04  
 15 9:30. And I was here at 8:30, of course, on Monday morning. 10:55:09  
 16 Q. You know, we're on Person Number 3 out of 13 folks. 10:55:15  
 17 And the answer that you've given me is you've looked at the 10:55:21  
 18 medical record, the part you chose to print out; you read 10:55:25  
 19 through it once in that 20-minute break. I've asked you a 10:55:29  
 20 second question: What fact do you base this statement that 10:55:32  
 21 she was exposed to a significant amount of arsine at the time 10:55:36  
 22 of the accident, and you're telling me you have to go back and 10:55:38  
 23 read it again. 10:55:42  
 24 A. I would have to go look at the whole CD-ROM, which 10:55:43  
 25 is much more extensive than what I have printed out here. 10:55:47

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1 A. Sir, one, I have -- again, I'd go through the whole 10:57:33  
 2 thing, but I do have Dr. Miller's and I was not aware until 10:57:39  
 3 you have informed me that he was, in fact, involved on any 10:57:45  
 4 litigation basis. I just have a doctor here that reports in 10:57:49  
 5 check that she's got kidney pain and kidney problems. Okay? 10:57:53  
 6 So that probably had something to do with it. I 10:57:58  
 7 would have had to look more. I've already said that other 10:58:01  
 8 than that, I don't find anything in what I have here that 10:58:06  
 9 supports it. 10:58:09  
 10 Two, when I say "treatment," a treatment plan is a 10:58:10  
 11 portion of when you go in to be evaluated. That's part of 10:58:13  
 12 both the diagnosis and treatment. That's how you establish 10:58:18  
 13 what you're going to deal with, so I was referring to the 10:58:21  
 14 treatment plan. 10:58:25  
 15 MR. TUCKER: Sir, you've been sitting here for a 10:58:27  
 16 while, and with your conference call it's been about 10:58:27  
 17 three hours. Would you like to go to the bathroom 10:58:31  
 18 before we go to the next person? 10:58:33  
 19 THE WITNESS: We could do that. 10:58:37  
 20 (A break was taken from 10:58 a.m. to 11:13 a.m.) 11:11:59  
 21 BY MR. TUCKER: 11:11:59  
 22 Q. Would you pull out your file on Bart Schnitzer. Do 11:12:05  
 23 you have your records before you regarding Bart Schnitzer? 11:13:46  
 24 A. Yes, sir. 11:13:50  
 25 Q. Do you have that little chart as to where these 11:13:50

16 (Pages 233 to 236)



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1 folks were? 11:13:55  
 2 A. Yes, sir. 11:13:56  
 3 Q. Would you look up Mr. Schnitzer, please. 11:13:57  
 4 A. Yes, sir. 11:14:14  
 5 Q. Where was Mr. Schnitzer? 11:14:14  
 6 A. Mr. Schnitzer is almost due east from the 11:14:16  
 7 Solkatronic. 11:14:25  
 8 Q. How far away? 11:14:27  
 9 A. Essentially the center of the park to the outer edge 11:14:30  
 10 of the park. 11:14:36  
 11 Q. Based on the scale you were using earlier, which was 11:14:37  
 12 the one you kind of assumed because you know how big a block 11:14:44  
 13 is in an industrial park, how far away is that? 11:14:48  
 14 A. Again, this is why I wanted to -- and I will need to 11:14:51  
 15 actually see the facility. But in this case, this is going to 11:14:58  
 16 be several hundred yards. 11:15:07  
 17 Q. Now, based on all of the information we have, with 11:15:10  
 18 the wind going to the southwest to the northeast -- 11:15:12  
 19 MR. WARD: Object to the form of the question. 11:15:17  
 20 That's not all of the available information we have. 11:15:19  
 21 BY MR. TUCKER: 11:15:23  
 22 Q. -- tell me how that -- if there was an arsine plume, 11:15:23  
 23 tell me how it got in the opposite direction from the same 11:15:28  
 24 direction the wind is blowing from? 11:15:33  
 25 A. Well, it's not opposite, but it's perpendicular to 11:15:35

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1 the main direction of the wind as far as the information you. 11:15:38  
 2 presented. 11:15:41  
 3 Q. Are you telling me that the arsine plume went east 11:15:41  
 4 several hundred yards? 11:15:49  
 5 A. No, sir. We don't know that. 11:15:53  
 6 Q. Other than the fact that Mr. Schnitzer was at that 11:15:58  
 7 location -- let me rephrase that question. 11:16:09  
 8 What information do you have that would indicate 11:16:16  
 9 that arsine gas would go that direction or that far? 11:16:19  
 10 A. With a large enough discharge of gas -- let's go 11:16:27  
 11 back to yesterday -- you're going to get some dispersion. 11:16:32  
 12 With that dispersion, and of course I did not have your -- 11:16:37  
 13 this piece of paper that presents wind directions, et cetera, 11:16:43  
 14 when I did this. 11:16:47  
 15 Q. That's Ingram 00149? 11:16:48  
 16 A. Yes, sir. I did not have that when I wrote this 11:16:52  
 17 report. 11:16:55  
 18 Q. Well, now you have that, how does that -- does that 11:16:55  
 19 change your opinion? 11:17:00  
 20 A. If, in fact, this -- if I based it on this in the 11:17:01  
 21 predominant direction, then it's going to say that one would 11:17:06  
 22 expect under -- there's some variability in the wind, they're 11:17:10  
 23 not real strong winds, but one would expect that the primary 11:17:14  
 24 plume is going to be at 90 degrees from the direction that 11:17:19  
 25 Mr. Schnitzer was from the site. 11:17:22

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1 Q. As another way of saying, the other direction? 11:17:22  
 2 A. Well, at a tangent. The other direction would be 11:17:25  
 3 180 degrees. 11:17:28  
 4 Q. You don't have to just rely on that. You also read 11:17:29  
 5 Dr. White's report, didn't you? 11:17:35  
 6 A. I did read Dr. White's report, yes, sir. 11:17:38  
 7 Q. Isn't that consistent with what's been marked in the 11:17:41  
 8 previous Deposition Exhibit Number 72? 11:17:45  
 9 A. The problem is Dr. White's report did not have this 11:17:48  
 10 actual data or the variability of the measurements. But the 11:17:51  
 11 problem is, of course, that measurements involved are not at 11:17:57  
 12 this site. They're some distance away. 11:18:00  
 13 Q. You also have Dr. White's report; is that correct? 11:18:00  
 14 A. Yes, sir. 11:18:04  
 15 (Cellphone rings) 11:18:04  
 16 (Off the record from 11:18 a.m. to 11:20 a.m.) 11:18:04  
 17 BY MR. TUCKER: 11:19:53  
 18 Q. Sir, we've had several interruptions for cellphone 11:19:53  
 19 calls during your deposition. Would you mind turning it off 11:20:00  
 20 for the rest of your deposition? 11:20:03  
 21 A. Unfortunately, my car is being serviced. If they 11:20:04  
 22 have to do something, they have to call me. If it's not the 11:20:09  
 23 automobile company, I won't answer it. 11:20:13  
 24 Q. Now that you know the information regarding the wind 11:20:15  
 25 direction on the date of this incident, would you believe that 11:20:20

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1 it's possible -- that it's likely that Mr. Sumter -- 11:20:28  
 2 Mr. Schnitzer was exposed to any significant amount of arsine 11:20:33  
 3 on that day? 11:20:37  
 4 A. I'm sorry. Could you restate your question, sir, at 11:20:38  
 5 least the last part of it anyway? 11:20:40  
 6 Q. We've talked about the way the wind blew and you 11:20:40  
 7 looked at the map and you see which direction Schnitzer was 11:20:44  
 8 located on the -- at the time of the incident on July 11th, 11:20:48  
 9 2001. It's information you didn't have when you wrote your 11:20:51  
 10 report. Would you like to rethink your opinion with respect 11:20:55  
 11 to Mr. Sumter now that you know he was in the opposite 11:20:58  
 12 direction from the release? 11:21:01  
 13 MR. WARD: Object to the form of the question 11:21:01  
 14 because it doesn't include all of the information 11:21:03  
 15 about Schnitzer's whereabouts on the day in question. 11:21:05  
 16 A. Let me answer your question, sir. And that is with 11:21:10  
 17 this information in hand, it would decrease my certitude that 11:21:13  
 18 there was likely to be an exposure. 11:21:19  
 19 BY MR. TUCKER: 11:15:23  
 20 Q. What you held up and said "with this in hand," 11:15:23  
 21 that's what was Plaintiff's Exhibit 72; is that right? 11:21:27  
 22 A. Yes, sir. 11:21:31  
 23 Q. And I inadvertently said "Sumter" in my question, 11:21:32  
 24 but we're talking about Schnitzer, aren't we? 11:21:36  
 25 A. Yes, sir. 11:21:39

17 (Pages 237 to 240)



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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

<p style="text-align: right;">Page 241</p> <p>1 Q. I apologize for getting them confused. When you say 11:21:41  2 it makes you less confident, what does that mean? "Less 11:21:44  3 certitude," what does that mean? 11:21:51  4 A. That means obviously I look harder at what weather 11:21:54  5 data we have and everything. I would consider it less -- less 11:22:03  6 certitude is I would have significantly less confidence that, 11:22:12  7 in fact, there was exposure in this acute incident. 11:22:18  8 Q. You say in your report that Mr. Sumter was 11:22:23  9 decontaminated and treated. I'm sorry. Did I say Sumter 11:22:31  10 again? 11:22:43  11 Going back to Mr. Schnitzer, you say "There are both 11:22:50  12 records of his decontamination and treatment consistent with 11:22:55  13 arsine exposure from the time of the accident." Would you 11:22:59  14 find those records, please? 11:23:06  15 (The witness reviewed records from 11:23 a.m. to 11:23:47  16 11:25 a.m.) 11:23:47  17 THE WITNESS: Were some of these already copied or 11:24:24  18 the stapling order has changed? 11:24:27  19 MS. SMITH: Nothing's been copied. Sometimes the 11:24:31  20 staples are in the bottom and sometimes they're in the 11:24:35  21 top, but I didn't unstaple anything. 11:24:38  22 A. I find no records of the decontamination treatment, 11:25:50  23 sir. 11:25:56  24 BY MR. TUCKER: 11:15:23  25 Q. So that's an error in your report? 11:15:23</p>	<p style="text-align: right;">Page 243</p> <p>1 sequelae of arsine exposure, so potentially, yes, sir. 11:27:51  2 Q. And having read this man's medical record and 11:27:55  3 appreciating that kidney sequelae is one possible reaction to 11:27:59  4 exposure, are you saying this man's kidney condition is a 11:28:05  5 consequence of arsine exposure? 11:28:08  6 A. I can't make that conclusion based on the records 11:28:15  7 that I'm looking at right now, no, sir. 11:28:31  8 Q. Do you know of any published literature that says 11:28:33  9 that renal failure from arsine poisoning can be -- the onset 11:28:37  10 of that could be delayed more than six months? 11:28:42  11 MR. WARD: Object to the form. These records 11:28:46  12 don't reflect the onset of the time. 11:28:49  13 A. Let me answer the question the way it was asked, and 11:28:52  14 that is, I'm not aware of anything supporting kidney failure 11:28:55  15 subsequent -- caused by arsine exposure, acute arsine 11:29:01  16 exposure, at six months or beyond. 11:29:06  17 BY MR. TUCKER: 11:15:23  18 Q. Okay. Again, I appreciate you haven't read 11:15:23  19 Dr. Harrison's deposition, but I have a -- I have the 11:29:13  20 transcript here. I want to read to you from Dr. Harrison's 11:29:18  21 deposition at Page 155. 11:29:25  22 Dr. Harrison states "Mr. Schnitzer has developed 11:29:26  23 renal failure." 11:29:32  24 And you agreed with that, right? 11:29:32  25 A. Yes, sir. 11:29:34</p>
<p style="text-align: right;">Page 242</p> <p>1 A. I would assume, based on looking at this, that would 11:25:59  2 be the case. 11:26:03  3 Q. You also say "More strikingly, he has developed 11:26:03  4 significant kidneys problems, starting shortly after the 11:26:06  5 exposure." 11:26:09  6 A. Yes, sir. 11:26:10  7 Q. What do you base that? 11:26:10  8 (The witness reviewed records from 11:26 a.m. to 11:26:27  9 11:27 a.m.) 11:26:27  10 A. This is his treatment for renal failure which 11:26:32  11 initiates -- starting in February, or at least the initial 11:26:37  12 records are, February of '02. 11:26:42  13 BY MR. TUCKER: 11:26:45  14 Q. In fact, that's the first time he visited a doctor 11:26:45  15 after July of 2001, isn't it? 11:26:49  16 A. No, sir. There was no records, but he visited 11:26:58  17 Occupational Medicine Clinic, it looks like Work Med 11:27:10  18 Incorporated in June, some months -- well, no, that would have 11:27:13  19 been after. 11:27:18  20 So, yes, sir, you are correct. And you also have -- 11:27:19  21 and the order here is somewhat jumbled, so it's February. 11:27:25  22 Okay. Yes, sir? 11:27:33  23 Q. Now, do you attribute that kidney problem to 11:27:36  24 exposure to arsine? 11:27:40  25 A. Kidney damage is one of the sequelae or potential 11:27:41</p>	<p style="text-align: right;">Page 244</p> <p>1 Q. Dr. Harrison states "Mr. Schnitzer has developed 11:29:34  2 renal failure that I think is not related to the arsine gas 11:29:39  3 exposure that's mentioned by Dr. Gad." 11:29:43  4 Question: "Not related?" 11:29:46  5 Answer: "I do not believe that is related to the 11:29:48  6 arsine gas exposure. That occurred seven months after 11:29:51  7 exposure. He had an increase in one of his antibodies against 11:29:55  8 a kidney marker. Time frame doesn't fit." 11:30:00  9 I want to also read you from Page 397 of that 11:30:05  10 deposition. Question by Mr. Ward to Dr. Harrison: "As to 11:30:08  11 Mr. Schnitzer, you said that you didn't believe his kidney 11:30:14  12 problems were related to an arsine exposure. Tell me what the 11:30:19  13 basis of that opinion was." 11:30:22  14 And Dr. Harrison's answer: "It looked to me like he 11:30:24  15 had a form of immunologically-mediated or immune-system-caused 11:30:27  16 renal failure. He had an antistreptolysin O that was 11:30:34  17 increased. That's a marker for a certain type of kidney 11:30:39  18 disease. I am not aware that that's linked to arsine gas 11:30:42  19 exposure." 11:30:47  20 Based upon your understanding of who Dr. Harrison 11:30:55  21 is, is he someone qualified to give that testimony? 11:30:58  22 A. As I said, I don't know the man but, yes, sir, as 11:31:01  23 best I know -- and I haven't read that transcript, but yes, 11:31:05  24 sir. 11:31:09  25 Q. Doesn't he pretty well say about as clearly as you 11:31:09</p>

18 (Pages 241 to 244)



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1 can that Mr. Schnitzer's kidney problems are not related to 11:31:12  
 2 arsine exposure? 11:31:16  
 3 MR. WARD: Object to the form. 11:31:18  
 4 A. Yes, sir. That's the opinion he presents, yes, sir. 11:31:18  
 5 BY MR. TUCKER: 11:15:23  
 6 Q. So going back to your report about Mr. Schnitzer, we 11:15:23  
 7 know that he was in a direction where it's unlikely for much 11:31:29  
 8 arsine to have gone because of the wind, certainly less 11:31:36  
 9 certitude of arsine going there, I believe you put? 11:31:41  
 10 A. Yes, sir. 11:31:44  
 11 Q. We know he was not decontaminated or treated, as set 11:31:44  
 12 out in your report, and we know that in Dr. Harrison's 11:31:49  
 13 opinion, who is giving an opinion with regard to Mr. Schnitzer 11:31:54  
 14 and others for this lawsuit for the plaintiff, that his kidney 11:31:58  
 15 problems did not come from arsine. 11:32:02  
 16 So knowing those three things now, that are 11:32:04  
 17 different from your report, do you still contend that in your 11:32:08  
 18 best professional judgment as a board-certified toxicologist 11:32:14  
 19 that Mr. Schnitzer was exposed to a significant amount of 11:32:18  
 20 arsine for a sufficient time during the accident to cause his 11:32:21  
 21 significant medical problems due to that exposure? 11:32:25  
 22 A. You're asking a compound question, so let me see if 11:32:29  
 23 I can respond and work through it to get to the answer of your 11:32:32  
 24 final question. There are several there. 11:32:37  
 25 One, I would note that -- I noted that he had 11:32:40

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1 significant kidney problems. You'll note that I don't say, 11:32:45  
 2 though, per se, that those are due explicitly to this arsine 11:32:49  
 3 exposure. Again, we're looking at a constellation of things. 11:32:54  
 4 Two, the chief argument that it's not arsine driven, 11:32:58  
 5 acute arsine driven, is, in fact, that we only have medical 11:33:02  
 6 reports that show it showing up six, seven months later which 11:33:07  
 7 is inconsistent with an acute arsine exposure. So I've 11:33:12  
 8 concurred with that part. However, as you make the point, in 11:33:16  
 9 between, he only went to see a doctor and had any kind of 11:33:20  
 10 evaluation at that point, so again, there may be a censored 11:33:24  
 11 effect there. 11:33:29  
 12 Three, the immunologic basis -- in fact, you do have 11:33:30  
 13 arsine, arsenic, you do get -- a component of the kidney may 11:33:37  
 14 be immunologic, may not, but there is no way to parse that out 11:33:43  
 15 with the current information. 11:33:48  
 16 Having addressed those three intermediate questions 11:33:49  
 17 that were compounded in your last question was: Does that 11:33:52  
 18 render or change your opinion? I would have to -- what I'm 11:33:56  
 19 saying is I have less certitude, and I would have to relook at 11:34:00  
 20 the data to be able to render an opinion. Sitting here with 11:34:04  
 21 the data I have in hand right now, I don't, in fact, feel that 11:34:08  
 22 I can say that these things are likely to be due to this acute 11:34:17  
 23 arsine exposure. 11:34:22  
 24 Q. Would you pull up Jennifer Shavers, please. 11:34:29  
 25 A. Okay. 11:34:59

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1 Q. Do you want to take just a second to familiarize 11:35:00  
 2 yourself with that. 11:35:32  
 3 A. Okay. 11:35:34  
 4 (The witness reviewed records from 11:35 a.m. to 11:39:06  
 5 11:39 a.m.) 11:39:09  
 6 A. Okay. Yes, sir. 11:39:09  
 7 BY MR. TUCKER: 11:15:23  
 8 Q. I'm looking at your report about Ms. Shavers. 11:15:23  
 9 A. Yes. 11:39:21  
 10 Q. You state that "There are no medical reports or 11:39:22  
 11 clinical data objectively supporting Ms. Shavers having had 11:39:24  
 12 significant acute arsine exposure." What do you mean by 11:39:29  
 13 "clinical data"? 11:39:34  
 14 A. Clinical data here would be laboratory measurements. 11:39:35  
 15 Q. What do you mean by medical reports? 11:39:42  
 16 A. Reports of examination taken by a medical facility 11:39:45  
 17 or a physician. 11:39:50  
 18 Q. A report of an examination that found something or 11:39:51  
 19 just the report of having had one? 11:39:55  
 20 A. No, not necessarily to have found something. 11:39:57  
 21 Q. Just having a medical examination? 11:40:02  
 22 A. Having an exam. That's an evaluation or report. 11:40:04  
 23 Q. And she didn't have either one of those; is that 11:40:07  
 24 right? 11:40:11  
 25 A. I did not feel so, yes, sir. 11:40:12

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1 Q. So you say "I cannot therefore render an opinion as 11:40:18  
 2 to any currently of her self-reported medical issues being 11:40:21  
 3 related to arsine exposure at the time of the accident." Is 11:40:25  
 4 that correct? 11:40:29  
 5 A. That should be "of any currently." Those two are 11:40:29  
 6 reversed. "Of her self-reported medical issues being related 11:40:34  
 7 to" the acute -- "to arsine exposure at the time of the 11:40:37  
 8 accident." 11:40:40  
 9 Q. Is that still your opinion? 11:40:40  
 10 A. Yes, sir. It's not an acute. There is nothing here 11:40:43  
 11 for an acute effect, I do not believe. 11:40:46  
 12 Q. Do you have any other opinions about Ms. Shavers? 11:40:49  
 13 A. Well, that's a question I was framed to ask, or I 11:40:52  
 14 was asked to address the acute -- that there may have been 11:40:59  
 15 some level of chronic exposure or not as a possibility, but I 11:41:05  
 16 wasn't asked to evaluate that, and I would have to do that 11:41:12  
 17 separately. 11:41:15  
 18 Q. Have you ever been asked to evaluate that? 11:41:16  
 19 A. No, sir. 11:41:18  
 20 Q. So as to Ms. Shavers, based on any work that you've 11:41:18  
 21 done so far, your opinion is there is no evidence that she's 11:41:23  
 22 had any consequences of arsine at the Port of Catoosa? 11:41:26  
 23 MR. WARD: Object to the form of the question. 11:41:30  
 24 That's not his conclusion. 11:41:31  
 25 A. That it was related to the acute exposure at the 11:41:32

19 (Pages 245 to 248)



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SHAYNE GAD

July 12, 2005

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1 time of the accident, yes, sir, I do not. 11:41:35  
 2 BY MR. TUCKER: 11:15:23  
 3 Q. And you don't have any opinion as to whether she 11:15:23  
 4 received arsine exposure any another time based on what you've 11:41:40  
 5 done so far? 11:41:44  
 6 A. Based on what I've done so far, that is correct, 11:41:44  
 7 sir. 11:41:45  
 8 Q. And you haven't been asked to make any further 11:41:45  
 9 analysis of that at this time? 11:41:48  
 10 A. Not at this time, no, sir. 11:41:50  
 11 Q. Would you turn to Josh Hinton, please. 11:41:52  
 12 MS. SMITH: He's Number 24. 11:42:07  
 13 BY MR. TUCKER: 11:15:23  
 14 Q. If you would like to put Ms. Shavers away and get 11:15:23  
 15 Mr. Hinton out. Again, trying to minimize the amount of paper 11:42:13  
 16 in front of you. 11:42:16  
 17 A. Yes, sir. 11:42:57  
 18 Q. Now, looking at your report on Mr. Hinton, one of 11:42:57  
 19 the questions you ask yourself as you prepared your report was 11:43:27  
 20 his location at the time of the accident — at the time of the 11:43:31  
 21 event, such that an exposure would more likely than not have 11:43:34  
 22 occurred. Do you remember that? 11:43:38  
 23 A. Yes, sir. 11:43:38  
 24 Q. What was Mr. Hinton's location? 11:43:39  
 25 A. North, northwest to the Solkatronic facility. 11:43:44

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1 Q. Stepfather. 11:46:01  
 2 A. I don't believe that I did, no, sir. 11:46:10  
 3 Q. Well, from reading those records, are you aware that 11:46:12  
 4 both of those people woke up in the morning with nausea and 11:46:23  
 5 vomiting? 11:46:29  
 6 A. No, sir. Since I didn't see Mr. Jones's medical 11:46:32  
 7 records, I really have no way — 11:46:37  
 8 MR. WARD: I object. That's a false statement as 11:46:38  
 9 to what the evidence is in this case. 11:46:41  
 10 BY MR. TUCKER: 11:15:23  
 11 Q. Let me ask it this way: Are you aware that Mr. Josh 11:15:23  
 12 Hinton woke up that morning with nausea and vomiting? 11:46:44  
 13 A. No, sir, I'm not aware of that fact. 11:46:47  
 14 Q. I'm going to hand you for your review, while we look 11:46:50  
 15 up that document, a — well, here, this is the — here are the 11:47:02  
 16 medical records from Saint Francis Hospital. This is the 11:47:12  
 17 admission summary from Saint Francis Hospital for Joshua 11:47:20  
 18 Hinton. Saving you from having to look for it, will you look 11:47:29  
 19 through the history of present illness and see if he awoke 11:47:33  
 20 with some problems that morning? 11:47:37  
 21 A. Yes, sir. 11:47:39  
 22 Q. What does it say was his condition that morning when 11:48:08  
 23 he woke up? 11:48:12  
 24 A. "This morning both he and his father awoke with the 11:48:13  
 25 above symptoms; including nausea, vomiting, headache, 11:48:19

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1 Q. That was at the Air X-Changer site? 11:43:46  
 2 A. That's not quite what's shown on this. What this 11:43:53  
 3 indicates — what this chart indicates is that he was actually 11:44:01  
 4 outside — or it may have been at the Air X-Changer site. The 11:44:07  
 5 actual location shown on here shows he was outside, between 11:44:11  
 6 that and the Solkatronic facility. 11:44:15  
 7 Q. Do you know what he was doing there? 11:44:15  
 8 A. I believe that he was working. This is 11:44:18  
 9 Dr. Hastings' — that is what it indicates, though. At the 11:44:53  
 10 time he would have been 15 years old. 11:45:06  
 11 Q. Now, you have not read Josh Hinton's deposition; is 11:45:14  
 12 that right? 11:45:18  
 13 A. That's correct, sir. 11:45:18  
 14 Q. Do you know — so you would have no way of knowing, 11:45:19  
 15 unless someone had told you, where Mr. Hinton testified he was 11:45:22  
 16 at 1:00 on July 11th when this accident occurred; is that 11:45:27  
 17 correct? 11:45:34  
 18 A. I have the mark where he was on the chart, yes, sir. 11:45:34  
 19 Q. And you're relying on that to be true? 11:45:36  
 20 A. I'm relying on that to be true, yes, sir, that and 11:45:38  
 21 what's in here. 11:45:42  
 22 Q. Did you read his hospital records? 11:45:44  
 23 A. Yes, sir. 11:45:51  
 24 Q. Did you by any chance read those for his father? 11:45:52  
 25 A. Father or stepfather? 11:45:59

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1 shortness of breath and also some mild abdominal discomfort." 11:48:24  
 2 Q. Would you look at your report on Josh Hinton? 11:48:28  
 3 A. Yes, sir. 11:48:31  
 4 Q. What are the symptoms he's complaining of in there? 11:48:31  
 5 A. Nausea, vomiting, headache, taste in the mouth. 11:48:41  
 6 Q. Except for taste in the mouth, he had all of those 11:48:56  
 7 same complaints the morning of the accident, didn't he? 11:48:59  
 8 A. To some degree, yes, sir. 11:49:02  
 9 Q. I'm going to hand you the written history on the 11:49:03  
 10 intake at Saint Francis Hospital on Josh Hinton and ask you to 11:49:17  
 11 review that, if you would, please. 11:49:23  
 12 A. This is Page 1 of 4. Yes, sir? 11:49:32  
 13 Q. Does that give you any insight as to where he was at 11:50:07  
 14 the time this occurred at 1:00 in the afternoon on July 11th, 11:50:11  
 15 2001? 11:50:15  
 16 MR. WARD: Object. That's a hearsay document. 11:50:16  
 17 You've got his affidavit, and I would request that you 11:50:19  
 18 make his affidavit available to Dr. Gad so that he 11:50:22  
 19 doesn't make an opinion based on false evidence. 11:50:27  
 20 BY MR. TUCKER: 11:15:23  
 21 Q. Looking at that hospital record, sir, what 11:15:23  
 22 information does that give you based on his whereabouts? 11:50:40  
 23 A. As I read it or read it, I don't see an indication 11:50:43  
 24 as to where he is on here. "Cough, shortness of breath, 11:50:47  
 25 worsens all day, not present during the time of exposure." 11:50:55

20 (Pages 249 to 252)



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1 To me, these symptoms were not present at the time 11:50:59  
 2 of exposure. That's how I read it. So honestly, I don't have 11:51:02  
 3 any information from that. Punctuation, perhaps. 11:51:07  
 4 Q. Read the second line and tell me what time he went 11:51:13  
 5 home according to the history he gave the doctor when he got 11:51:16  
 6 to the hospital? 11:51:20  
 7 MR. WARD: Again, I object to you providing him 11:51:21  
 8 hearsay information which doesn't reflect the truth of 11:51:23  
 9 what Joshua Hinton said. 11:51:27  
 10 A. "Works at site and went home today at 11:00" is what 11:51:36  
 11 it says here, yes, sir. 11:51:42  
 12 BY MR. TUCKER: 11:51:23  
 13 Q. That was two hours before the accident, wasn't it? 11:51:23  
 14 A. That would be two hours before the accident, yes, 11:51:46  
 15 sir. 11:51:49  
 16 Q. Mr. Ward said that I didn't provide you with the 11:51:49  
 17 true fact, and I guess those true facts he's referring to are 11:51:52  
 18 in an affidavit of Mr. Hinton. Please feel free to look at 11:51:56  
 19 your document and see if you have an affidavit. 11:52:02  
 20 A. I don't have an affidavit from Mr. Hinton. 11:52:04  
 21 MR. TUCKER: I'm going to go cough a minute. 11:52:04  
 22 (Off the record from 11:52 a.m. to 11:53 a.m.) 11:52:04  
 23 BY MR. TUCKER: 11:52:55  
 24 Q. Sir, have you read that hospital record that you 11:52:55  
 25 have in front of you that says the man went home at 11:00? 11:53:59

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1 conclusion? 11:55:18  
 2 MR. WARD: Object to the form. It's a conclusion 11:55:19  
 3 made on the basis of all the available evidence. 11:55:23  
 4 A. And the information I have -- and this goes to 11:55:29  
 5 patient history in Dr. Hastings' report indicating that he and 11:55:36  
 6 his stepfather were taken to Saint Francis Hospital for 11:55:42  
 7 evaluation, he was seen 16:45 p.m., being triaged through the 11:55:47  
 8 Saint Francis emergency room for nausea, vomiting, shortness 11:55:53  
 9 of breath and body aches. 11:55:57  
 10 They do document that he and his stepfather were 11:56:05  
 11 working laying tile at a Port of Catoosa employment when the 11:56:08  
 12 onset of these symptoms became apparent. 11:56:12  
 13 BY MR. TUCKER: 11:56:15  
 14 Q. What are you reading from, sir? 11:56:15  
 15 A. I'm sorry. I thought I said this is the patient 11:56:19  
 16 history from Dr. Hastings. 11:56:24  
 17 Q. Do you know who that is? 11:56:26  
 18 A. Yes, sir. 11:56:28  
 19 Q. Who is Dr. Hastings? 11:56:28  
 20 A. Dr. Hastings is a physician who was, my 11:56:30  
 21 understanding, retained by counsel to evaluate these 11:56:35  
 22 individuals. 11:56:42  
 23 Q. Not just these 13, but all 190 or whatever it is, 11:56:44  
 24 right? 11:56:48  
 25 A. Yes, I believe so. 11:56:49

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1 A. I saw that, yes, sir. 11:54:04  
 2 Q. The other record says that the symptoms he's 11:54:05  
 3 complaining of he had the morning he woke up before he even 11:54:09  
 4 went to the port? 11:54:13  
 5 A. Yes, sir. 11:54:14  
 6 Q. One of them is symptoms and one of them is time, 11:54:15  
 7 correct? 11:54:18  
 8 A. Yes, sir. 11:54:18  
 9 Q. One is preexisting symptoms and one of them is the 11:54:19  
 10 time he left the port, right? 11:54:23  
 11 A. Right. And the two conflict, in terms of the 11:54:24  
 12 symptomology, but go ahead. 11:54:28  
 13 Q. Well, in your interpretation of the handwritten 11:54:30  
 14 symptomology, those symptoms were not present at the time he 11:54:33  
 15 left the port, but he left the port because of complaining of 11:54:37  
 16 -- what's "N and U." Nausea and what? 11:54:44  
 17 A. Nausea and vomiting. 11:54:45  
 18 Q. Why would he have left the port at 11:00 complaining 11:54:47  
 19 of nausea and vomiting if he weren't still having the 11:54:51  
 20 symptoms? That's the same symptom, isn't it? 11:54:58  
 21 A. That is nausea and vomiting, yes. 11:55:00  
 22 Q. So if you have taken note of those two records at 11:55:03  
 23 the time you made your evaluation of whether or not Josh 11:55:07  
 24 Hinton had any kind of a condition that was consistent with 11:55:10  
 25 arsine exposure, would you have reached a different 11:55:14

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1 Q. So this is not a treating physician for Mr. Hinton? 11:56:50  
 2 A. This is not a treating physician, no. 11:56:53  
 3 Q. And what is the date he gave that history? 11:56:54  
 4 A. This is February -- excuse me, January of 2003. 11:56:56  
 5 Q. January 2003? 11:57:03  
 6 A. Yes, sir. 11:57:05  
 7 Q. So when you're giving an opinion under oath to the 11:57:05  
 8 federal court as a board-certified toxicologist, "It is my 11:57:09  
 9 best professional judgment that Mr. Hinton was exposed to a 11:57:14  
 10 significant amount of arsine at the time of the accident and 11:57:17  
 11 that his current medical problems are due to that exposure," 11:57:21  
 12 that requires that you disregard the medical record of the 11:57:24  
 13 history that says he went home from the site two hours before 11:57:28  
 14 the event even occurred, doesn't it? 11:57:35  
 15 A. No, sir. It requires that I look at conflicting 11:57:35  
 16 pieces of information. And I think I went through that 11:57:38  
 17 particular piece of information, that particular chart, the 11:57:42  
 18 way I had read it. 11:57:47  
 19 Q. I'm talking about the 11:00, not the symptoms. He 11:57:48  
 20 went home at 11:00, how could he have been there? 11:57:51  
 21 MR. WARD: Object to the form. You're still 11:57:56  
 22 misrepresenting the evidence which you know to be 11:57:58  
 23 contrary to your question. 11:58:00  
 24 BY MR. TUCKER: 11:15:23  
 25 Q. Let me ask another question before we get to that: 11:15:23

21 (Pages 253 to 256)



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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

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1 If there was some mysterious affidavit, do you think Mr. Ward 11:58:04  
 2 thought it was important enough to give it to you? 11:58:11  
 3 MR. WARD: Object to what I thought. 11:58:15  
 4 BY MR. TUCKER: 11:58:23  
 5 Q. He didn't give it to you, did he? 11:58:23  
 6 A. I do not have those, no, sir. 11:58:16  
 7 Q. You wouldn't have thrown it away, would you? 11:58:18  
 8 A. No, sir. 11:58:20  
 9 Q. I hope you wouldn't have lost it. 11:58:21  
 10 A. Unfortunately, as age goes on -- no, sir, I wouldn't 11:58:23  
 11 have lost it. These were maintained together. 11:58:28  
 12 Q. So getting back to my original question: How do you 11:58:31  
 13 reconcile your opinion with the medical history that was in 11:58:37  
 14 the Saint Francis record given by this young man when he got 11:58:40  
 15 to the hospital, however he got there, that says he went home 11:58:44  
 16 at 11:00 because of nausea and vomiting? 11:58:49  
 17 A. Because I do have in Dr. Hastings' information 11:58:53  
 18 otherwise that he was there and it got worse. And that's 11:59:04  
 19 where they, in fact -- that same document said it got worse 11:59:10  
 20 the longer he stayed at the site. 11:59:14  
 21 I frequently see medical records where times 11:59:16  
 22 conflict, where I find that they report drawing blood some 11:59:21  
 23 hours before an accident occurred and the person is taken to 11:59:28  
 24 the emergency room. So timing -- it's unfortunate, but in 11:59:33  
 25 terms of time of day, there could be some variability of when 11:59:38

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1 perfectionists and may not be, but yes, sir. 12:01:26  
 2 Q. All right. My point being, assuming Dr. Harrison is 12:01:28  
 3 correct and that's what Mr. Hinton told him, that was more 12:01:31  
 4 than a year and a half after the accident; isn't that right? 12:01:35  
 5 Hastings, I mean. When Mr. Hinton went in, that was more than 12:01:38  
 6 a year and a half after the accident? 12:01:41  
 7 A. That was, in fact, more than a year after the 12:01:43  
 8 accident, yes, sir. 12:01:43  
 9 Q. And in the hospital record, it's contemporaneous to 12:01:43  
 10 when he showed up to get looked at because -- for why ever he 12:01:48  
 11 showed up; is that right? 12:01:53  
 12 A. Yes, sir. 12:01:54  
 13 Q. Now, with that information, going back to my big 12:01:54  
 14 long question about a board-certified toxicologist, is it your 12:02:10  
 15 best professional judgment that Mr. Hinton was exposed to a 12:02:15  
 16 significant amount of arsine at the time of the accident on 12:02:19  
 17 July 11 and his current medical problems are due to that 12:02:21  
 18 exposure? 12:02:26  
 19 A. If I had that information, I would have to 12:02:26  
 20 reevaluate that opinion, yes, sir. 12:02:28  
 21 Q. Let's assume the information I gave you is true and 12:02:30  
 22 correct about the stepfather's records. You've read it as far 12:02:37  
 23 as Mr. Hinton himself is concerned. 12:02:41  
 24 A. I read that one page, yes, sir. 12:02:47  
 25 Q. And that's the page that talk about time, isn't it? 12:02:48

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1 things are done. 11:59:42  
 2 Q. Well, we don't have access to his stepfather's 11:59:43  
 3 records because they're on your CD. But if the father went to 11:59:58  
 4 admitting in one part of the hospital and this Josh Hinton 12:00:02  
 5 went to admitting in another part of the hospital because of 12:00:09  
 6 his age, and both, at the time they were at the hospital, gave 12:00:12  
 7 a history of having left the port at 11:00 -- if both of them 12:00:17  
 8 told that story, would that cause you then to believe that 12:00:25  
 9 Dr. Hastings was mistaken when he wrote his report on which 12:00:29  
 10 you rely? 12:00:35  
 11 MR. WARD: Object to the form. 12:00:40  
 12 A. If that were the case -- and I don't believe I 12:00:41  
 13 actually have his stepfather's medical records on that. It's 12:00:43  
 14 only the 13 individuals, so I don't have access to the 12:00:48  
 15 father's medical records, so I have no way of knowing that. 12:00:52  
 16 With that said, if that were the situation, and I saw it, that 12:00:56  
 17 would obviously increase my confidence in that reporting as 12:01:01  
 18 far as timing. 12:01:06  
 19 BY MR. TUCKER: 11:58:23  
 20 Q. And then we also know that -- even assuming that 11:58:23  
 21 Dr. Harrison didn't make a mistake, and we know that experts 12:01:10  
 22 make mistakes when they write reports, don't we? 12:01:15  
 23 A. We know this? We infer this. 12:01:18  
 24 Q. Didn't we find that out earlier today? 12:01:20  
 25 A. We know sometimes attorneys self-report being 12:01:22

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1 A. Yes, sir. 12:02:51  
 2 Q. So I'll re-ask my question to you -- 12:02:52  
 3 MR. TUCKER: Could you reread my question to him, 12:03:55  
 4 please, Stephanie? 12:03:57  
 5 THE COURT REPORTER: "Now, with that information, 12:02:03  
 6 going back to my big long question about a 12:02:08  
 7 board-certified toxicologist, is it your best 12:02:12  
 8 professional judgment that Mr. Hinton was exposed to a 12:02:16  
 9 significant amount of arsine at the time of the 12:02:19  
 10 accident on July 11 and his current medical problems 12:02:21  
 11 are due to that exposure?" 12:02:25  
 12 A. Assuming that set of facts, that would -- it would 12:03:57  
 13 not be my opinion in that case that he was exposed to a 12:04:04  
 14 significant amount in relationship to the rupture. 12:04:12  
 15 BY MR. TUCKER: 12:04:15  
 16 Q. Okay. 12:04:15  
 17 MR. TUCKER: Do you want to eat lunch? 12:04:22  
 18 THE WITNESS: Sure. 12:04:25  
 19 (A lunch recess was taken from 12:04 p.m. to 12:41 12:04:28  
 20 p.m.) 12:04:28  
 21 BY MR. TUCKER: 12:04:15  
 22 Q. I'm looking at your report. Will you tell me where 12:04:15  
 23 Mr. Kharas was located? 12:40:35  
 24 A. The main gate for ASEC Manufacturing; west, 12:40:37  
 25 northwest of the Solkatronic facility. 12:41:05

22 (Pages 257 to 260)



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1 Q. How far? 12:41:12  
 2 A. The best estimate, it would be several hundred 12:41:14  
 3 yards. 12:41:22  
 4 Q. Based upon what we've talked about so far, that is 12:41:23  
 5 to say we had an exothermic event involving arsine, had a wind 12:41:28  
 6 to the southeast to the northwest, answering your question, 12:41:38  
 7 was his location, Kharas, that is, at the time of the event 12:41:40  
 8 such that exposure would more likely than not have occurred? 12:41:44  
 9 A. Yes, sir. I would have to say that, in fact, it's 12:41:49  
 10 likely he's in a place that likely has got -- not along the 12:41:55  
 11 main -- the axis of the wind, if it is predominantly in that 12:42:01  
 12 direction, but in that general direction. 12:42:06  
 13 Q. And do you have any information that would indicate 12:42:10  
 14 to you that it would be even physically possible for a 12:42:13  
 15 sufficient concentration of arsine to reach the place where 12:42:16  
 16 Mr. Kharas says he was located to have any effect on 12:42:23  
 17 Mr. Kharas? 12:42:25  
 18 A. No, sir. We do not have that it was physically 12:42:26  
 19 possible, yes, sir. That it did occur, no, sir, we don't have 12:42:30  
 20 any measured values. 12:42:36  
 21 Q. You said it was possible? 12:42:37  
 22 A. Yes, sir. 12:42:41  
 23 Q. Can we go any further than saying it was possible? 12:42:41  
 24 A. From this exposure without better information, no, 12:42:46  
 25 sir, I would not, in other words, say that Mr. Kharas was -- 12:42:59

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1 likely. 12:45:32  
 2 Q. Let me ask you this, sir: You say that he's several 12:45:33  
 3 hundred yards away from the incident, he's not directly in 12:45:37  
 4 line with the incident, but yet you say it's more likely than 12:45:41  
 5 not that he was exposed to sufficient arsine the day of that 12:45:46  
 6 event to cause medical problems. 12:45:49  
 7 When you say "it's more likely than not," what do 12:45:53  
 8 you base that on, what fact? 12:45:55  
 9 A. The amount of release, and the fact that he is not 12:45:58  
 10 directly in the prevailing direction of the wind, if you want 12:46:03  
 11 to draw a straight line, but he's not that far off the axis of 12:46:09  
 12 it. 12:46:14  
 13 Q. But you told me you don't have any calculations 12:46:14  
 14 about what happened when the arsine was released. 12:46:18  
 15 A. Yes, sir. 12:46:18  
 16 Q. You said in your supplemental report that still you 12:46:18  
 17 don't know if any arsine got up anywhere; do you recall that? 12:46:21  
 18 A. No, sir. 12:46:26  
 19 Q. Let me read it to you. This is your report of 12:46:27  
 20 March 17th, 2005. You say "Whether any arsine survived this 12:46:44  
 21 reaction" -- that's the exothermic reaction -- "is unknown, 12:46:50  
 22 but is likely not completely germane to the question at hand." 12:46:54  
 23 So whether any arsine survived the reaction you said 12:46:58  
 24 in your report is unknown? 12:47:00  
 25 A. I said -- that is correct, but that's not what you 12:47:02

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1 wouldn't have been exposed. In fact, it was likely he was 12:43:06  
 2 exposed. But in terms of how much, there is no way of 12:43:10  
 3 addressing that question, sir. Not based on any kind of 12:43:13  
 4 measurement of material in the air or whatever. 12:43:19  
 5 MR. TUCKER: Would you reread my question? 12:43:33  
 6 THE COURT REPORTER: "Can we go any further than 12:42:42  
 7 saying it was possible?" 12:42:44  
 8 A. With the information that I have been presented, 12:44:17  
 9 that there was -- I would say that it is more likely than not 12:44:30  
 10 that Mr. Kharas would have had such exposure. 12:44:35  
 11 BY MR. TUCKER: 12:44:35  
 12 Q. If Mr. Kharas had been another several yards in the 12:42:42  
 13 same direction, what would your answer be? 12:44:43  
 14 A. Along the same axis? 12:44:45  
 15 Q. Yes. 12:44:47  
 16 A. Along the same axis, obviously that would decrease 12:44:47  
 17 the amount of potential exposure because you get dispersion. 12:44:51  
 18 Q. Are we ever going to meet the point where you say 12:44:56  
 19 it's merely possible as opposed to saying it's more likely 12:45:00  
 20 than not? 12:45:04  
 21 A. Well, yes, sir, there would be a point that that is. 12:45:05  
 22 Q. How far would that be? 12:45:09  
 23 A. Again, the proviso, actually seeing the physical 12:45:10  
 24 layout would make a difference here because a flat map has 12:45:17  
 25 limitations. But clearly, if the man is a mile away, not very 12:45:21

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1 said in the question you asked me. 12:47:07  
 2 Q. Well, we start with the fact that you don't know if 12:47:09  
 3 any arsine survived the reaction because you said that in the 12:47:11  
 4 report? 12:47:15  
 5 A. In a scientific sense, no one's measured. 12:47:15  
 6 Q. You don't know. And you don't have any information 12:47:19  
 7 about how rapidly arsine decomposes when exposed to the air at 12:47:24  
 8 100 degrees on a hot humidity day; is that correct? 12:47:31  
 9 A. We don't know that either, no, sir. 12:47:35  
 10 Q. You don't have any dispersion model? 12:47:37  
 11 A. That's correct. 12:47:40  
 12 Q. You don't have any expertise in doing dispersion 12:47:41  
 13 models? 12:47:45  
 14 A. That is correct, I am not an expert in doing 12:47:46  
 15 dispersion models. 12:47:50  
 16 Q. You don't know to what event or what extent the 12:47:50  
 17 arsine, if there was arsine, dilutes as the plume widens and 12:47:56  
 18 spreads, assuming there was a plume; is that correct? 12:48:02  
 19 A. Nobody measured. Nobody knows. 12:48:04  
 20 Q. You don't know of anybody that ever measured any 12:48:06  
 21 presence of the arsine at the location Mr. Kharas reported 12:48:10  
 22 that he was? 12:48:13  
 23 A. There were no measurements at that point, sir. 12:48:15  
 24 There were no measurements, period. 12:48:17  
 25 Q. So when you say "It's more likely than not 12:48:17

23 (Pages 261 to 264)



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INGRAM v. AIR PRODUCTS

SHAYNE GAD

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1 Mr. Kharas," several yards away from this event "was exposed 12:48:21  
 2 to arsine causing him medical problems," I would like you to 12:48:25  
 3 list for me the facts you rely on to make that 12:48:28  
 4 more-likely-than-not opinion as a board-certified 12:48:34  
 5 toxicologist. 12:48:36  
 6 A. Let's read what we said first. "There are both 12:48:36  
 7 records of his decontamination and treatment from the time of 12:48:41  
 8 the accident." Those are facts. "Reported soreness of the 12:48:45  
 9 throat and tastes at the time of the accident consistent with 12:48:50  
 10 arsine exposure." Those are also correct. 12:48:55  
 11 We know that, in fact, he was, though not in a 12:49:03  
 12 direct line with the information that we have presented here, 12:49:08  
 13 with what the wind would have been, if it was the same or what 12:49:13  
 14 the air flow would have been if it was the same and was 12:49:17  
 15 measured at some miles distant. But he is not that far off 12:49:20  
 16 that axis. So it's likely that he, in fact, would have a 12:49:24  
 17 dispersion with this big a -- I mean 50 pounds of arsine. We 12:49:29  
 18 don't know how much it was. And that "don't know" doesn't 12:49:33  
 19 mean -- because you didn't look doesn't mean it didn't happen; 12:49:36  
 20 it means you can't use that in the evaluation. 12:49:39  
 21 Q. So those are the facts. Any others there? 12:49:42  
 22 A. There are other facts in the record, but those are 12:49:47  
 23 the primary facts, yes, sir. 12:49:50  
 24 Q. Let's look at those. Tell me where he was 12:49:52  
 25 decontaminated and when. 12:49:57

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1 him, obviously admitted. 12:56:03  
 2 BY MR. TUCKER: 12:56:04  
 3 Q. Is that what you mean by "decontamination," changing 12:56:04  
 4 your clothes at the hospital? 12:56:08  
 5 A. Overstating the data. 12:56:10  
 6 Q. Overstating the data? 12:56:13  
 7 A. Yes, sir. They made the note he was admitted. 12:56:14  
 8 Q. And you just assumed he had been decontaminated; is 12:56:18  
 9 that right? 12:56:22  
 10 A. They took him out of his clothes when he was 12:56:22  
 11 admitted, sir. 12:56:23  
 12 Q. They don't just let you sleep in your clothes at the 12:56:23  
 13 hospital, do they? 12:56:28  
 14 A. I had read evacuated in multiple sites, yes, sir. 12:56:28  
 15 Q. Let's look at his various reports. He did have a 12:56:32  
 16 slight elevation of his plasma hemoglobin, doesn't he? 12:56:39  
 17 A. And bilirubin, yes. 12:56:42  
 18 Q. Was it found significant by the folks that were 12:56:44  
 19 doing the medical evaluation? 12:56:52  
 20 MR. WARD: Which folks? Dr. Hastings? 12:56:53  
 21 Dr. Harrison? 12:56:53  
 22 BY MR. TUCKER: 12:56:55  
 23 Q. Saint Francis Hospital, where he went to be treated, 12:56:55  
 24 the real doctors. 12:57:01  
 25 A. One would assume Dr. Hastings is a real doctor. You 12:57:03

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1 A. Okay. 12:50:00  
 2 (The witness reviewed records from 12:49 p.m. to 12:51:24  
 3 12:53 p.m.) 12:52:31  
 4 A. He leaves the site and goes to Saint Francis on 12:52:31  
 5 that -- for treatment and evaluation, and at that time he was 12:52:41  
 6 evacuated. 12:52:54  
 7 BY MR. TUCKER: 12:53:00  
 8 Q. On what do you base the fact that you say he was 12:53:00  
 9 evacuated? 12:53:05  
 10 A. "History of present illness: Works two blocks from 12:53:13  
 11 the arsine exposure accident. He was evacuated." 12:53:17  
 12 Q. Oh, that's the plant. I'm sorry. I thought you 12:53:20  
 13 meant evacuated to the hospital. 12:53:21  
 14 A. No. I'm just reading the history. 12:53:23  
 15 Q. He was just removed from the plant? 12:53:26  
 16 A. He went home, and his wife heard about the arsine 12:53:30  
 17 exposure; directed to go to the emergency room for evaluation. 12:53:33  
 18 This is from that time -- 12:53:37  
 19 Q. Let me interrupt you and remind you that my question 12:53:40  
 20 is: Where in the record does it say he was decontaminated? 12:53:43  
 21 (The witness reviewed records from 12:53 p.m. to 12:54:54  
 22 12:55 p.m.) 12:55:05  
 23 A. The decontamination, it was not by emergency 12:55:05  
 24 personnel. During the course of evaluation, they kept him 12:55:56  
 25 overnight so they would have changed his clothes and gotten 12:56:00

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1 might evaluate from there, but he does have an M.D. 12:57:07  
 2 Q. So was Dr. Jekyll. 12:57:07  
 3 A. No, he was a -- no, you're right. He was a surgeon. 12:57:13  
 4 MR. WARD: He has a D.O. 12:57:13  
 5 BY MR. TUCKER: 12:57:17  
 6 Q. And he's a D.O., not an M.D., sir. Dr. Hastings is 12:57:17  
 7 not an M.D., just so you'll know. 12:57:22  
 8 A. Okay. This is Dr. Fincher, to answer your question. 12:57:25  
 9 He's the person whose notes we're looking at now. 12:57:29  
 10 Q. Take a look at his discharge summary to help you 12:57:36  
 11 find what you're looking for. 12:57:40  
 12 A. That's what I'm looking at right now. 12:57:46  
 13 Q. Is there a discussion there of his having hemoglobin 12:57:48  
 14 that was within normal limits? 12:57:52  
 15 A. Well, it's not within normal limits. It went back 12:57:59  
 16 to normal limits, 21.1. 12:58:07  
 17 Q. Hemoglobin? 12:58:10  
 18 A. Oh, hemoglobin. You don't mean plasma hemoglobin? 12:58:11  
 19 Q. No. I'm talking about the red blood cells, the 12:58:13  
 20 total red blood cells. 12:58:15  
 21 A. Cellular hemoglobin. 12:58:16  
 22 Q. Yes. 12:58:18  
 23 A. Yes, sir. 12:58:18  
 24 Q. So it stayed where it was supposed to stay, right? 12:58:18  
 25 A. Well, it's in the normal range, yes, sir. 12:58:22

24 (Pages 265 to 268)



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1 Q. It's at the high end of the normal range, isn't it? 12:58:25  
 2 A. Yes, sir. 12:58:28  
 3 Q. His creatinine was stable, right? 12:58:29  
 4 A. Yes, sir. 12:58:38  
 5 Q. His plasma hemoglobin was initially 21.1, which is 12:58:39  
 6 described as mildly elevated; is that right? 12:58:44  
 7 A. Well, yes, that's how it describes it. 12:58:47  
 8 Q. Do you disagree with that? 12:58:49  
 9 A. When it cuts in half over the course of the 12:58:53  
 10 admission, it obviously was twice as high as it was after — 12:58:56  
 11 when he was discharged. That's a — a doubling is something 12:59:02  
 12 that starts to get my attention. 12:59:06  
 13 Q. I appreciate you're not a physician or phlebotomist, 12:59:07  
 14 but what are some of the causes of getting a report of a 12:59:12  
 15 slight elevation in plasma free hemoglobin when everything 12:59:15  
 16 else about your blood work, that is to say your haptoglobin, 12:59:21  
 17 doesn't go down and your hemoglobin doesn't go down and 12:59:26  
 18 everything else is normal. What are the other causes that 12:59:30  
 19 could account for someone having an artifact of mildly 12:59:36  
 20 elevated plasma free hemoglobin when their blood is examined? 12:59:38  
 21 MR. WARD: Object to form. 12:59:42  
 22 BY MR. TUCKER: 12:59:43  
 23 Q. Do you know? 12:59:43  
 24 A. Yes. A whole bunch of things can lead to a higher 12:59:44  
 25 plasma hemoglobin. Any of the number of causes that would 12:59:48

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1 Q. And when we look at his other red blood cell 13:01:20  
 2 components, which is the number of red blood cells, the 13:01:24  
 3 hemoglobin count, we look at the hematocrit level, and we look 13:01:28  
 4 at the haptoglobin, none of those three would confirm the 13:01:34  
 5 presence of plasma free hemoglobin of any consequence 13:01:39  
 6 circulating in this man's blood at the time it was drawn from 13:01:43  
 7 his body; is that correct? 13:01:47  
 8 A. Yes, sir. And that also suggests at the same time 13:01:49  
 9 that your mechanical-artifacted collection would have affected 13:01:58  
 10 one of those. It would have affected red blood cell count 13:02:04  
 11 because where does the hemolysis come from? You broke up red 13:02:08  
 12 cells, so it's going to affect the account. 13:02:12  
 13 Q. It might have broken up some, but it still stayed 13:02:15  
 14 within the normal range, right? 13:02:17  
 15 A. Yes, sir. 13:02:20  
 16 Q. Do you know how many patients presented on the 11th 13:02:25  
 17 of July to Saint Francis? 13:02:28  
 18 A. No, sir, not to Saint Francis specifically. 13:02:34  
 19 Q. In those tringe situations, where they have a large 13:02:38  
 20 number of people coming in at all times, do you know how 13:02:42  
 21 quickly they try to get those tests accomplished to look for 13:02:45  
 22 serious problems? 13:02:49  
 23 A. Yes, sir. 13:02:50  
 24 Q. Pretty quickly? 13:02:50  
 25 A. Yes, sir, generally. 13:02:51

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1 lead to some degree, that would lead to more hemolysis, more 12:59:52  
 2 lysis of red blood cells. 12:59:58  
 3 Q. Well, let's talk about what some of them are. What 13:00:00  
 4 are they? 13:00:03  
 5 A. You can be — your serum electrolytes could be out 13:00:03  
 6 of killer. You could have an exposure to a range of agents. 13:00:09  
 7 Hydrogen sulfide would do it, for example. Arsine would do 13:00:17  
 8 it. So you're getting changes. A lot of things will, in 13:00:24  
 9 fact, change membrane fragility. 13:00:28  
 10 Q. Let me interrupt you, Doctor. Have you heard the 13:00:30  
 11 expression that "While your hoof beats in the night, I think 13:00:31  
 12 of horses and not zebras"? 13:00:35  
 13 A. No, sir. 13:00:38  
 14 Q. I think what that means is you kind of look for the 13:00:40  
 15 obvious causes before you look for the obscure causes of 13:00:43  
 16 something for an artifact? 13:00:47  
 17 MR. WARD: Object to the sidebar. Move to strike 13:00:49  
 18 it. 13:00:53  
 19 BY MR. TUCKER: 13:00:54  
 20 Q. What about the drawing of blood, the 13:00:54  
 21 mechanically-induced elevation of plasma free hemoglobin in a 13:01:00  
 22 blood sample? 13:01:06  
 23 A. You can, in drawing blood or how you handle the 13:01:07  
 24 sample therein, lead to more hemolysis. It can be an artifact 13:01:11  
 25 of an analysis, yes, sir. 13:01:19

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1 Q. Does that raise the possibility and specter of an 13:02:52  
 2 increased likelihood of damaging the blood by the way you draw 13:02:57  
 3 it? 13:03:03  
 4 A. Let's go back to your hoof beats. Yes, sir, but 13:03:03  
 5 your hoof beat says that why would this individual had made a 13:03:07  
 6 point — of the other individuals, we didn't see these things. 13:03:12  
 7 Why would this individual respond differently? Why, in his 13:03:15  
 8 case, would you assume that you saw a mechanical trauma from 13:03:19  
 9 collection of blood and not in any of the others? It's not 13:03:24  
 10 the one to the right, it's not the one to the left, it's the 13:03:27  
 11 one in the middle. And it's not — it's not a case of we have 13:03:30  
 12 some variation or some elevation, it's a doubling. 13:03:37  
 13 Q. Let me tell you that this gentleman was the 40th 13:03:41  
 14 patient to present at Saint Francis. They had done 39 before 13:03:46  
 15 he got there. 13:03:51  
 16 A. Yes, sir. 13:03:52  
 17 Q. Do you think that might kind of indicate anything 13:03:52  
 18 about how he was evaluated? Do you know? 13:03:56  
 19 A. If he was the last patient that was done, that might 13:04:05  
 20 be that they were at the end of it and fatigued. Was he the 13:04:10  
 21 last patient? 13:04:15  
 22 Q. I'll represent to you that he was. 13:04:15  
 23 A. If, in fact, he was the last patient that was done, 13:04:17  
 24 that would cause you to have to look at it and see if there 13:04:20  
 25 was a trend. 13:04:24

25 (Pages 269 to 272)



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<p>1 Q. Would you convert the finding of 21.1 in the Saint Francis Hospital discharge summary to milligrams per deciliter? 13:04:25 13:04:48</p> <p>2 A. Let me look at it, sir. 13:04:56</p> <p>3 Q. I'll tell you the discharge summary says that his hemoglobin was — or plasma free hemoglobin was 21.1, mildly elevated. I want you to do a mathematical conversion for me. 13:06:29 13:06:34 13:06:40</p> <p>4 MR. WARD: Are you quoting a document? 13:06:46</p> <p>5 BY MR. TUCKER: 13:06:48</p> <p>6 Q. I'll read it again. 13:06:48</p> <p>7 MR. WARD: Why don't you make it an exhibit? 13:06:50</p> <p>8 BY MR. TUCKER: 13:06:54</p> <p>9 Q. "His plasma hemoglobin was initially 21.1," parenthesis, "mildly elevated." 13:06:54 13:06:59</p> <p>10 MR. WARD: Why don't you make it an exhibit? 13:07:03</p> <p>11 MR. TUCKER: It is an exhibit, Exhibit 26. 13:07:07</p> <p>12 A. Does it give the units on that in this, sir? This is milligrams per deciliter. 13:07:14 13:08:54</p> <p>13 BY MR. TUCKER: 13:09:03</p> <p>14 Q. Does 21 — 13:09:03</p> <p>15 A. In normal range is zero to 10.4, and this is 21.1. 13:09:06</p> <p>16 And the units given here are in milligrams. 13:09:12</p> <p>17 Q. And you didn't mention that in your report; is that correct? 13:09:16 13:09:25</p> <p>18 A. I'm sorry? 13:09:25</p>	<p>1 per deciliter for Mr. Kharas? 13:11:05</p> <p>2 A. Approximately 10 1/2. 13:11:07</p> <p>3 Q. So that's one-tenth of the amount that you said would be the lower threshold of where you would be concerned; isn't that right? 13:11:09 13:11:13 13:11:17</p> <p>4 A. That is one-tenth of what I said yesterday. If I had a value of this, I would definitely be concerned, yes, sir. 13:11:17 13:11:21 13:11:24</p> <p>5 Q. Okay. And any of his other blood work — let me start that over again. 13:11:24 13:11:36</p> <p>6 We've already established that neither his hematocrit level nor his hemoglobin level demonstrates any abnormality; is that correct? 13:11:39 13:11:41 13:11:47</p> <p>7 A. Yes. 13:11:48</p> <p>8 Q. And when we look at his urine results, do we demonstrate any abnormality in those urine results? 13:11:48 13:11:56</p> <p>9 A. No, sir. 13:12:02</p> <p>10 Q. I'm sorry? 13:12:43</p> <p>11 A. No, sir. 13:12:44</p> <p>12 Q. I apologize to you; I forgot my question. 13:12:45</p> <p>13 THE WITNESS: Would you please read counsel back his question? 13:12:45 13:12:45</p> <p>14 BY MR. TUCKER: 13:12:45</p> <p>15 Q. These delays between question and answer are starting to get to me. You're wearing me out by the spaces 13:12:57 13:12:59</p>
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<p>1 Q. You didn't mention anything about his plasma free hemoglobin levels in your report about him; is that correct? 13:09:25 13:09:25</p> <p>2 A. That's correct. 13:09:26</p> <p>3 Q. Am I correct in assuming you did not consider that to be significant any more than the hospital did? 13:09:26 13:09:29</p> <p>4 A. No, sir. I just didn't -- I did not mention it in the report. A doubling again. Go to the normal range, the same standard that we've used in looking at other values for other individuals, and normal range, zero to 10.4; this is 21.1. With time, it goes back, in fact, to 10.4 which is the top of the normal range, the reference range really. 13:09:32 13:09:36 13:09:44 13:09:48 13:09:55</p> <p>5 Q. So that's 21.1. Now, yesterday you told us — you made a conversion for me from your grams of plasma free hemoglobin per milliliter to milligrams per deciliter. You said would you be concerned if there was an increase of 100 to 200 milligrams per deciliter above baseline; is that right? 13:10:19 13:10:22 13:10:25</p> <p>6 A. Yes, sir, I think that's what I said. 13:10:30</p> <p>7 Q. What is your increase above baseline for Mr. Kharas? 13:10:33</p> <p>8 A. Well, that's where I have an incomplete set of data here. It says it's in milligrams. 13:10:36 13:10:40</p> <p>9 Q. Well, let me represent to you, sir, that Saint Francis reports in milligrams per deciliter, just as you did. 13:10:45 13:10:49</p> <p>10 A. Just as I originally interpreted them. 13:10:53</p> <p>11 Q. Correct. Just as you assumed they did or however. But assuming that, that was an increase of how many milligrams 13:10:57 13:10:58</p>	<p>1 between the question and your answer. 13:12:59</p> <p>2 A. Well, it's as much fun as trying to catch the question in between his objections and I'm sitting here — not criticizing counsel or anything. 13:13:02 13:13:06</p> <p>3 MR. TUCKER: Please read back the last question. 13:13:08</p> <p>4 THE COURT REPORTER: "And when we look at his urine results, do we demonstrate any abnormality in those urine results?" 13:11:50 13:11:52 13:12:00</p> <p>5 A. The answer was "no, sir." 13:13:20</p> <p>6 BY MR. TUCKER: 13:11:50</p> <p>7 Q. Okay. Now, look at his haptoglobin. We would expect the haptoglobin to go down if you were having a problem with having to have been exposed to arsine, wouldn't we? 13:13:21 13:13:25 13:13:29</p> <p>8 A. That's another marker that would suggest that or support it. 13:13:33 13:13:36</p> <p>9 Q. And the fact that the haptoglobin goes down, that's caused by the increase in plasma free hemoglobin; isn't that correct? Isn't that the physiological mechanism by which haptoglobin goes down? It finds that plasma free hemoglobin? 13:13:36 13:13:40 13:13:44 13:13:50</p> <p>10 A. It's actually more of a chemical mechanism, but yes, sir. 13:13:52 13:13:56</p> <p>11 Q. But the question is, it goes down, right? So let's look at the haptoglobin level and see what his haptoglobin levels were. 13:13:56 13:14:02 13:14:05</p> <p>12 A. His haptoglobin levels here wander around the middle 13:14:07</p>

26 (Pages 273 to 276)



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1 of the reference range, yes, sir. 13:14:23  
 2 Q. So they're normal? 13:14:24  
 3 A. They're in what we normally consider normal, yes, 13:14:26  
 4 sir. 13:14:29  
 5 Q. Now, do you recall that classic triad of arsine 13:14:29  
 6 symptomology? 13:14:33  
 7 A. I recall your presentation of saying that, yes, sir. 13:14:34  
 8 Q. You didn't disagree with that, right? 13:14:37  
 9 A. I did not disagree with it, right. 13:14:40  
 10 Q. Look at Mr. Kharas complaints -- and I note in your 13:14:41  
 11 report of April 15th, 2005, you said "The classic triad of 13:14:47  
 12 effects is abdominal pain, dark urine and jaundice." 13:14:52  
 13 A. Yes, sir. 13:14:58  
 14 Q. I didn't just invent that. 13:14:58  
 15 A. At this point we're dealing with disease or fatigue 13:15:01  
 16 in many cases. 13:15:06  
 17 Q. Look back at Mr. Kharas and tell me whether he 13:15:06  
 18 presents with any of the classic triad of arsine symptoms or 13:15:11  
 19 if he had any of those symptoms at any time during the time he 13:15:15  
 20 was in contact with Saint Francis Hospital during the first 48 13:15:19  
 21 hours after this event on July 11th, 2001? 13:15:23  
 22 A. No, sir. The indication you have here is -- or the 13:15:28  
 23 only thing that is on this discharge summary that's out of 13:15:47  
 24 sorts was, in fact, the plasma hemoglobin elevation of plasma 13:15:52  
 25 hemoglobin. 13:16:01

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1 Q. And that plasma hemoglobin was elevated only 13:16:01  
 2 one-tenth of the amount that would concern you; isn't that 13:16:07  
 3 right? 13:16:12  
 4 A. No, sir. Not that they would be concerned. It was 13:16:12  
 5 one-tenth of the amount that I think we were trying to ask. 13:16:18  
 6 It's one-tenth of the amount that I said yesterday, that if I 13:16:21  
 7 had this kind of level, it would definitely concern me. 13:16:24  
 8 Q. Okay. So "Mr. Kharas" -- as defined in your 13:16:27  
 9 report -- "reports having headache and cephalgia." What's 13:16:37  
 10 cephalgia? I thought that was headache? 13:16:42  
 11 A. Ill feeling. Not necessarily headache; ill feeling 13:16:47  
 12 in the head. 13:16:53  
 13 Q. Sick in the head? 13:16:56  
 14 A. Physiologically sick in the head. 13:16:56  
 15 Q. Those are his complaints, and people have headaches 13:16:59  
 16 all of the time, don't they? 13:17:02  
 17 A. I don't. But some people do, yes, sir. 13:17:04  
 18 Q. In fact, not to put too fine a point on it, our 13:17:08  
 19 reporter, Ms. Fischer, asked for a couple pain relievers for a 13:17:13  
 20 headache earlier in this deposition, didn't she? 13:17:19  
 21 A. I actually was listening to you and not to her, 13:17:23  
 22 But -- 13:17:27  
 23 Q. If I represented to you that beginning in 1996 and 13:17:27  
 24 continuing every year thereafter that this gentleman presented 13:17:30  
 25 to various medical practitioners complaining of headaches and, 13:17:35

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1 in fact, in August of 1996 had his brain exposed to an MRI to 13:17:39  
 2 determine the cause of his headaches. Did you know that 13:17:46  
 3 information? 13:17:48  
 4 A. No, sir. "Brain exposed to an MRI"? That he 13:17:50  
 5 underwent an MRI, is what I think you would like to say on 13:17:55  
 6 that, no, sir. 13:17:59  
 7 Q. You weren't aware of that? 13:18:00  
 8 A. No, sir. 13:18:02  
 9 Q. Would it affect you to know that he had that history 13:18:03  
 10 going back all of the way to 1996? 13:18:06  
 11 A. And that would change my evaluation. Then I would 13:18:09  
 12 say "This is a person that tends to have headaches 13:18:15  
 13 frequently," as opposed to guessing everybody tends to have 13:18:18  
 14 headaches. 13:18:23  
 15 Q. And you've talked a little bit about numbness. You 13:18:23  
 16 don't mention it in Kharas' reports. But if Mr. Kharas' 13:18:27  
 17 history shows that beginning in 1996 he started having 13:18:31  
 18 tingling and pain and numbness and compression neuropathy and 13:18:35  
 19 that that continued on and was seen again in 1998 and this 13:18:39  
 20 time having to do with his feet, if he were to today to 13:18:43  
 21 complain of numbness, would that be of importance to you 13:18:46  
 22 considering whether or not that numbness he complains of today 13:18:49  
 23 is related to any potential or possible arsine exposure? 13:18:53  
 24 A. It's something I would have to consider. It's 13:18:57  
 25 something that I would, in my own world, recommend -- again, 13:18:59

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1 as I said yesterday -- a myograph to try to get a better idea 13:19:06  
 2 of what the causality might be. 13:19:10  
 3 Q. This couldn't really tell you what the causality was 13:19:11  
 4 in 1996, 1997 or 1998, could it? 13:19:15  
 5 A. That would tell me if it was psychosomatic, or if it 13:19:18  
 6 was getting worse or better. And the change in conduction 13:19:23  
 7 velocity could give you some idea of the causality or the 13:19:27  
 8 mechanism of what's going on. It wouldn't necessarily tell 13:19:31  
 9 you in that case. 13:19:34  
 10 Q. Without a baseline EMG, how could you tell whether 13:19:35  
 11 it was progressing? 13:19:38  
 12 A. You would have to do several. 13:19:39  
 13 Q. And you couldn't go back to before the accident when 13:19:41  
 14 he was first complaining of numbness, could you? 13:19:44  
 15 A. No, sir. That's why you would just do a progression 13:19:46  
 16 in this period of time. 13:19:51  
 17 Q. Even if it was progressing, you wouldn't know what 13:19:52  
 18 caused it in 1996 or some other cause in between, would you? 13:19:56  
 19 A. Well, you would have to look at the data because 13:20:00  
 20 it's not just a decrease in conduction velocity; it's the 13:20:03  
 21 nature of the change in the conduction mechanism. 13:20:11  
 22 Q. Let me ask you some questions about Mr. Kharas then. 13:20:11  
 23 Your report says that "Mr. Kharas reports having headache and 13:20:15  
 24 cephalgia." You now know he also reported that as long as 13:20:18  
 25 five years before this event in July of 2001. 13:20:25

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<p style="text-align: right;">Page 281</p> <p>1 We know that there are no records of 13:20:29</p> <p>2 decontamination; we know his treatment consisted of receiving 13:20:31</p> <p>3 IV fluids, which is also a treatment of dehydration; we know 13:20:38</p> <p>4 when he got to the hospital he did not have any nausea, 13:20:43</p> <p>5 jaundice or dark urine; and we know that, with the exception 13:20:48</p> <p>6 of a very slightly elevated plasma free hemoglobin, he had no 13:20:52</p> <p>7 other laboratory values that were at all abnormal in urine or 13:20:56</p> <p>8 blood; is that right? 13:21:01</p> <p>9 A. Yes, sir. 13:21:01</p> <p>10 Q. We also know he was several hundred yards away from 13:21:02</p> <p>11 the site; is that right? 13:21:05</p> <p>12 A. Yes, sir. 13:21:06</p> <p>13 Q. Taking all of those new facts into consideration, is 13:21:06</p> <p>14 it still your best professional judgment as a board-certified 13:21:11</p> <p>15 toxicologist that Mr. Kharas was exposed to sufficient 13:21:16</p> <p>16 exposure of arsine in terms of level and time at the time of 13:21:20</p> <p>17 the accident that his current medical problems are due to that 13:21:23</p> <p>18 exposure? 13:21:27</p> <p>19 A. If I enter those facts into consideration and I 13:21:27</p> <p>20 include them in my evaluation, I would have to say that it 13:21:32</p> <p>21 would cause me to believe it was less likely than not that 13:21:38</p> <p>22 Mr. Kharas' reported problems were due to acute exposure on 13:21:45</p> <p>23 that time and that day. 13:21:49</p> <p>24 Q. Do you have any information that his symptoms are 13:21:51</p> <p>25 connected to any exposure of arsine at any time? 13:21:57</p>	<p style="text-align: right;">Page 283</p> <p>1 Q. And Mr. Ingram, you said, "He reports having 13:38:53</p> <p>2 numbness, headache and reoccurant hemolysis in the current 13:39:04</p> <p>3 time frame, some three years after the accident." 13:39:07</p> <p>4 (Cellphone rings) 13:39:12</p> <p>5 BY MR. TUCKER: 13:39:13</p> <p>6 Q. And you report there are records of decontamination 13:39:13</p> <p>7 and treatment and tastes at the time of the accident which is 13:39:16</p> <p>8 July 11th? 13:39:24</p> <p>9 A. Yes, sir. 13:39:25</p> <p>10 Q. When you say "reoccurant hemolysis," tell me what 13:39:26</p> <p>11 you mean? 13:39:31</p> <p>12 A. I mean at multiple times there were measurements 13:39:33</p> <p>13 that were consistent with there being some hemolysis or some 13:39:42</p> <p>14 reduction in blood cell count or increase in plasma 13:39:47</p> <p>15 hemoglobin, is my best memory. 13:39:51</p> <p>16 Q. What you say here is "reoccurant hemolysis in the 13:39:57</p> <p>17 current time frame." Now, that's December 30th, 2004. 13:39:59</p> <p>18 A. In the current time frame — 13:40:04</p> <p>19 Q. What did you mean by that? 13:40:10</p> <p>20 A. Let me read it for you here or let me read it for 13:40:12</p> <p>21 myself. I mean by that, at three years after the accident we 13:40:18</p> <p>22 have — in that history of those three years, we have 13:40:28</p> <p>23 information that says that. 13:40:33</p> <p>24 Q. What period of time did this reoccurant hemolysis 13:40:35</p> <p>25 occur that you're talking about in your report? 13:40:40</p>
<p style="text-align: right;">Page 282</p> <p>1 A. No, sir. That's not a question I've been asked to 13:22:00</p> <p>2 look at. 13:22:03</p> <p>3 Q. So the answer is you don't have such an opinion one 13:22:03</p> <p>4 way or the other? 13:22:06</p> <p>5 A. That's correct. 13:22:07</p> <p>6 Q. The man complained of a sore throat. Do you know of 13:22:07</p> <p>7 any literature that says sore throat is consistent with 13:22:13</p> <p>8 exposure to arsine? 13:22:18</p> <p>9 A. Yes, sir, that's one of the things that is 13:22:19</p> <p>10 described. 13:22:20</p> <p>11 Q. I thought arsine is nonirritating and that's why 13:22:20</p> <p>12 it's so bad? 13:22:24</p> <p>13 A. Depends on the level. By the time you smell 13:22:25</p> <p>14 arsine — and it doesn't have what we call a warning property. 13:22:30</p> <p>15 Okay? It's not necessarily that it's not irritating; the 13:22:32</p> <p>16 problem is there is no warning property to it. 13:22:40</p> <p>17 Q. If you can get enough arsine to cause you a sore 13:22:43</p> <p>18 throat, are you going to have some kind of blood results? 13:22:46</p> <p>19 A. Yes, sir, within the frame, if you adequately 13:22:49</p> <p>20 sample, I would expect you would. 13:22:52</p> <p>21 MR. TUCKER: Let's take a break. 13:23:06</p> <p>22 (A break was taken from 1:23 p.m. to 1:39 p.m.) 13:23:06</p> <p>23 BY MR. TUCKER: 13:23:09</p> <p>24 Q. We're going to talk about Mr. Doug Ingram. 13:30:09</p> <p>25 A. Yes, sir. 13:38:52</p>	<p style="text-align: right;">Page 284</p> <p>1 A. Between the accident and this time, three years 13:40:42</p> <p>2 hence. 13:40:47</p> <p>3 Q. What record are you relying on to say that? 13:40:47</p> <p>4 A. I believe I would have to recollect and check the 13:40:51</p> <p>5 records. 13:40:55</p> <p>6 Q. All right. 13:40:56</p> <p>7 (The witness reviewed records from 1:41 p.m. to 13:40:57</p> <p>8 1:45 p.m.) 13:40:57</p> <p>9 THE WITNESS: There's a highlighter built into 13:45:06</p> <p>10 these things but the highlighter tends to be real 13:45:09</p> <p>11 weak. 13:45:13</p> <p>12 MR. TUCKER: (Indicating). 13:45:14</p> <p>13 THE WITNESS: Yes, sir, I am reading while I'm 13:45:15</p> <p>14 trying to talk to you. 13:45:16</p> <p>15 (The witness reviewed records from 1:45 p.m. to 13:47:48</p> <p>16 1:56 p.m.) 13:54:57</p> <p>17 MR. TUCKER: Could you please reread the question? 13:54:57</p> <p>18 THE COURT REPORTER: "What record are you relying 13:40:48</p> <p>19 on to say that?" 13:40:49</p> <p>20 BY MR. TUCKER: 13:40:48</p> <p>21 Q. "Reoccurant hemolysis in the current time frame," 13:56:58</p> <p>22 what's the data to support that, sir. 13:57:03</p> <p>23 A. There are in his records two pieces we should look 13:57:16</p> <p>24 at. These are both out of the St. John's after he was 13:57:20</p> <p>25 admitted subsequent to the accident. We have emergency room 13:57:25</p>

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1 admission 1900, 7:00 in the evening, and we have plasma 13:57:35  
 2 hemoglobin at 33 milligrams per deciliter, indicating as a 13:57:43  
 3 high. 13:57:53  
 4 If we go forward to -- and that's the lead-in. And 13:57:54  
 5 then we go forward to 25-22 at the bottom, we see -- 13:58:04  
 6 Q. 25-22? 13:58:15  
 7 A. These are paginated at the bottom of these records, 13:58:19  
 8 at least on this one, Document 25 apparently. 13:58:22  
 9 Q. Will you hold up what you're showing so I can 13:58:26  
 10 compare that? 13:58:30  
 11 A. Here at the bottom. 13:58:31  
 12 Q. Okay. It's the same document I have. 13:58:33  
 13 A. You see plasma hemoglobin; they get the high end at 13:58:37  
 14 the 33 on the initial test, so they -- he then tests again. 13:58:41  
 15 They show at just after midnight the next day a 14, again, 13:58:49  
 16 showing a high. They do one at 7:00 in the morning, they get 13:58:56  
 17 a 7. It appears to be going down, back in the normal range. 13:59:01  
 18 And then they do one about 1:00 in the afternoon that day 13:59:05  
 19 after. We have a 12 and, again, denoted as a high. And then 13:59:08  
 20 at 6:00 in the evening that same day, a 13, denoted as a high. 13:59:13  
 21 Q. So we can put that in some sort of perspective. 13:59:21  
 22 Using the numbers you told us earlier about when you became 13:59:28  
 23 concerned, that number would be 110 as opposed to 33; isn't 13:59:31  
 24 that right? 13:59:37  
 25 A. I'll say again, what I said yesterday was those are 13:59:37

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1 numbers that would definitely give me cause to be concerned. 13:59:42  
 2 Q. So it would be 110 as opposed to 33, a little over 13:59:45  
 3 three times more than 33? 13:59:51  
 4 A. Sir, if I had those, I would definitely be 13:59:52  
 5 concerned. But in the current case, I have ones that the 13:59:58  
 6 hospital's denoted -- they're all above the 10.4 normal range. 14:00:01  
 7 Q. So when you say this is "reoccurrent," you're talking 14:00:07  
 8 about July 11 and July 12; is that correct? 14:00:09  
 9 A. At multiple measures, yes. 14:00:13  
 10 Q. Now, in your reports you say "reoccurrent hemolysis 14:00:15  
 11 in the current time frame some three years after the 14:00:20  
 12 accident." Is that a misstatement in your report? 14:00:25  
 13 A. No. I had to go back to the data. The reason you 14:00:28  
 14 asked, I believe -- and I don't mean to try to read it for 14:00:31  
 15 you. My intention was -- my meaning was that we had a string 14:00:55  
 16 of numbers, all of which -- obviously not drawn out of the 14:01:00  
 17 fact he was doing triage, multiple measurements or sticks of 14:01:04  
 18 multiple people. He's elevated out of their normal range. In 14:01:10  
 19 fact, they denote him as being high in the range for plasma 14:01:14  
 20 hemoglobin. That was the reoccurrence. 14:01:23  
 21 Q. My question is: Is there a reoccurrence some three 14:01:23  
 22 years after the accident? That's what your sentence says. 14:01:26  
 23 "Reports having reoccurrent hemolysis in the current time frame 14:01:30  
 24 some three years after the accident." Is that a mistake in 14:01:34  
 25 your report? 14:01:36

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1 A. Maybe a mistake in punctuation, sir. 14:01:36  
 2 Q. Did you mean to say he was having hemolysis starting 14:01:39  
 3 in July of 2001 and continuing to the current time which was 14:01:42  
 4 December of 2004? Did you mean to say that? 14:01:46  
 5 A. No, sir. 14:01:50  
 6 Q. What you meant to say was he had reports of a plasma 14:01:51  
 7 free hemoglobin level that was slightly elevated on July 11th 14:01:56  
 8 through July 12th; is that right? 14:02:03  
 9 A. My intended meaning was that there were multiple 14:02:05  
 10 times in the interval during which he had been admitted at the 14:02:08  
 11 time of the accident when there was hemolysis. 14:02:13  
 12 Q. And those were all -- 14:02:17  
 13 A. It was an acute versus a chronic. 14:02:19  
 14 Q. And those are in a two-day period? 14:02:21  
 15 A. Yes, sir. 14:02:23  
 16 Q. Now, looking at the other indicator, does his 14:02:25  
 17 hemoglobin stay in the normal range the whole time he was 14:02:33  
 18 here? 14:02:37  
 19 A. His hemoglobin, his bound hemoglobin, his cellular 14:02:37  
 20 hemoglobin, is within the normal range the entire time, yes, 14:02:42  
 21 sir. 14:02:45  
 22 Q. One time there was an eight-tenths of a volume 14:02:45  
 23 percent of a hematocrit below the normal range; is that right? 14:02:53  
 24 A. Yes, sir. 14:02:57  
 25 Q. Not much, is it? 14:02:59

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1 A. No, sir. 14:03:00  
 2 Q. Did he have urine tests? 14:03:01  
 3 A. Yes, sir. 14:03:03  
 4 Q. Any of those urine tests -- 14:03:05  
 5 A. At various times. But I saw nothing in the urine 14:03:08  
 6 test that -- or in the reports of the urine tests that showed 14:03:11  
 7 any abnormality, other than those that were of his physical 14:03:15  
 8 condition. 14:03:19  
 9 Q. No hemoglobinuria? Not even any sign of blood in 14:03:20  
 10 the urine, right? 14:03:25  
 11 A. It's clear yellow urine, yes, sir. 14:03:26  
 12 Q. And the urine tests showed that as well; is that 14:03:29  
 13 correct? 14:03:34  
 14 A. It's the same question the second time. 14:03:34  
 15 Q. Well -- 14:03:37  
 16 A. That's what the urine tests showed, yes, sir. 14:03:39  
 17 Q. Okay. Do your files contain an admission and 14:03:42  
 18 discharge summary from St. John? 14:03:59  
 19 A. The physical one I have here, I'm not finding it. 14:04:02  
 20 Anything that's typed, there are scribbles. 14:04:05  
 21 Q. It appears we have the same record because I got 14:04:09  
 22 these from St. John, and I think the same things were sent to 14:04:16  
 23 you. Do you know Mr. Ingram's past history or anything about 14:04:21  
 24 it? 14:04:32  
 25 A. Better definition of past history. Medical history? 14:04:33

29 (Pages 285 to 288)



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1 Q. Let's start with medical history. It mentions other 14:04:40  
 2 histories too, but I'm going to ask you about the medical 14:04:40  
 3 history. 14:04:40  
 4 For example, did you know that prior to July 11th, 14:04:44  
 5 2001, he broke a pool stick over an ole boy's head because the 14:04:53  
 6 boy talked to his wife at a bar? 14:04:58  
 7 A. No, sir. 14:05:00  
 8 Q. I was going to ask about his medical history, 14:05:01  
 9 though. 14:05:06  
 10 A. I have no knowledge of pool sticks or pool halls in 14:05:06  
 11 Oklahoma. 14:05:10  
 12 Q. And you don't have his previous medical history; is 14:05:11  
 13 that right? 14:05:16  
 14 A. There is some previous medical history here. He 14:05:16  
 15 suffered from being overweight, he's got some elevated 14:05:21  
 16 cholesterol, he's prediabetic. Those things are in the 14:05:28  
 17 history. 14:05:34  
 18 Q. Well, one of your points that you have listed there 14:05:35  
 19 is headache. Do you see that, "numbness, headache and 14:05:38  
 20 reoccurrent hemolysis"? 14:05:42  
 21 A. Yes, sir. 14:05:43  
 22 Q. Where was Mr. Ingram located, by the way? 14:05:44  
 23 A. Mr. Ingram is, in fact, at the Air X-Changers, 14:05:55  
 24 north, northwest of the Solkatronic. 14:06:20  
 25 Q. Are you aware that in 1997 that Mr. Ingram had a 14:06:23

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1 that kind of history of recurrent headaches, these are pretty 14:08:02  
 2 steady headaches, aren't they? 14:08:02  
 3 A. This is someone who has a history of having 14:08:06  
 4 headaches and obviously a history of adequately reporting to 14:08:10  
 5 physicians. 14:08:17  
 6 Q. Now, the patient reports, according to the 14:08:17  
 7 St. John's record -- I'm going to show it to you. It's your 14:08:22  
 8 Deposition Exhibit 6. That's a treatment record, emergency 14:08:26  
 9 department there at St. John. Do you see that? 14:08:29  
 10 A. Yes, sir. 14:08:32  
 11 Q. Do you see any notation as to what the strange taste 14:08:33  
 12 was he tasted? 14:08:38  
 13 A. Metallic taste. 14:08:39  
 14 Q. We previously talked about the fact that we're not 14:08:40  
 15 aware of any metallic taste from arsine; is that correct? 14:08:43  
 16 A. Yes, sir. 14:08:48  
 17 Q. So that deposition exhibit to your deposition -- is 14:08:49  
 18 it Deposition Exhibit Number 25? I misspoke when I said 6. 14:08:56  
 19 Is that correct, that's 25? 14:09:01  
 20 A. Yes, sir, that's correct, 25. 14:09:02  
 21 Q. So would it be fair to summarize what you're saying 14:09:05  
 22 is that Mr. Ingram was in the area of Air X-Changers at the 14:09:16  
 23 time this event occurred in July of 2001? 14:09:21  
 24 A. Yes, sir. 14:09:23  
 25 Q. And on the 11th and 12th of July of 2001, his blood 14:09:24

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1 head injury in a car wreck? 14:06:35  
 2 A. Yes, sir, I did see that. 14:06:37  
 3 Q. Are you aware that in 1999 he reported to his 14:06:39  
 4 treating physician that he had a three-week-long headache? 14:06:43  
 5 A. I don't recall that, no, sir. 14:06:48  
 6 Q. In May of 1999, back to Dr. Farish, headache and 14:06:50  
 7 neck ache. Were you aware of that? 14:06:55  
 8 A. Yes, sir, I think in general, yes, sir. 14:06:59  
 9 Q. "December of 2000, headache for four to six months 14:07:01  
 10 with a pain of a 7 on a scale of 1 to 10 reported on December 14:07:06  
 11 5th of 2000 at Saint Francis Hospital"? 14:07:11  
 12 A. No, sir, I don't recollect that in the records, a 14:07:14  
 13 four- to seven-month headache. 14:07:19  
 14 Q. Four- to six-month headache. On a pain -- a 1 to 10 14:07:21  
 15 pain scale and the reported pain was 7. Are you familiar with 14:07:25  
 16 that? 14:07:29  
 17 A. No, sir. 14:07:29  
 18 Q. March 19th of 2001 he reported a three-week 14:07:31  
 19 headache. Do you recall that? 14:07:37  
 20 A. I don't recall that, no. 14:07:39  
 21 Q. July 11th, 2001, he reports he has a headache. 14:07:42  
 22 Headaches aren't really unusual for this gentleman, are they? 14:07:48  
 23 A. He has a history back in his prior medical records 14:07:52  
 24 that this individual -- 14:07:57  
 25 Q. Based on what you told us yesterday when you have 14:07:59

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1 reports showed plasma free hemoglobin that were slightly 14:09:32  
 2 elevated but still less than a third or about a third of the 14:09:36  
 3 level you told us yesterday would be one of concern for you. 14:09:44  
 4 Is that about right? 14:09:48  
 5 A. No, sir. That's misrepresenting exactly the 14:09:48  
 6 situation. One, a threefold increase over normal range is not 14:09:53  
 7 what I would describe as slightly elevated. 14:09:57  
 8 Two, I say again what I said yesterday was, if I had 14:10:00  
 9 to pick a bright line, certainly, this is something that would 14:10:02  
 10 concern me. It doesn't mean that things that are less than 14:10:06  
 11 that wouldn't concern me. Obviously, a threefold increase -- 14:10:09  
 12 and the hospital itself denotes them as being high, elevated. 14:10:13  
 13 Q. But to get to your point that you drew yesterday, it 14:10:18  
 14 would require a ten-fold increase; isn't that right? 14:10:21  
 15 A. A ten-fold for sure I would be concerned. 14:10:24  
 16 Q. Okay. And we read literature earlier today that 14:10:27  
 17 said when you've had exposure to arsine following, for 14:10:36  
 18 example, an accidental escape of arsine that's 2000 14:10:39  
 19 milliliters per deciliter isn't really not unusual; isn't that 14:10:43  
 20 right? 14:10:47  
 21 A. No, sir, that's not what it said. 14:10:48  
 22 Q. Did it say 2 milligrams per liter? 14:10:48  
 23 A. It said that -- let's read the exact words. 14:10:50  
 24 MR. WARD: You placed a document in front of him. 14:11:02  
 25 MR. TUCKER: That's reference Number 1 to his 14:11:06

30 (Pages 289 to 292)



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<p>1 report of December 30, 2004. 14:11:08</p> <p>2 A. This is Carter, the toxicology and environmental 14:11:11</p> <p>3 health article. "Plasma hemoglobin levels often rise," often, 14:11:15</p> <p>4 or more commonly than not, but "often rise to greater than 14:11:21</p> <p>5 2 grams per deciliter." 14:11:26</p> <p>6 BY MR. TUCKER: 14:11:28</p> <p>7 Q. I think what I said was not unusual but often is 14:11:28</p> <p>8 probably just fine. What else is not unusual? Go ahead and 14:11:30</p> <p>9 read the rest of it. 14:11:33</p> <p>10 A. 18.5 grams per deciliter has been reported. That 14:11:36</p> <p>11 would obviously be the highest level that they found or 14:11:44</p> <p>12 reported. 14:11:48</p> <p>13 Q. Now, comparing that to your bright line, your bright 14:11:49</p> <p>14 line was about 110, this literature says 2000 milligrams per 14:11:54</p> <p>15 deciliter - 14:12:03</p> <p>16 A. Milliliters. 14:12:05</p> <p>17 Q. And the gentleman we're talking about here, 14:12:06</p> <p>18 Mr. Ingram, the highest he got was 33; is that right? 14:12:09</p> <p>19 A. Yes, sir. Threefold the normal range. 14:12:13</p> <p>20 Q. So getting back to what I said, we know that he's 14:12:13</p> <p>21 had headaches forever preceding this incident, or at least 14:12:19</p> <p>22 since his car wreck; we know he had hemolysis for a couple of 14:12:22</p> <p>23 days and it got as high as 33, that is to say his plasma free 14:12:26</p> <p>24 hemoglobin got as high as 33; do you know whether or not 14:12:31</p> <p>25 Mr. Ingram had any of the triad of whatever it was you said? 14:12:35</p>	<p>1 obligation to prove something did happen or might have 14:13:39</p> <p>2 happened or something else might have caused it or this might 14:13:42</p> <p>3 have been the cause? You're supposed to prove it did happen; 14:13:45</p> <p>4 is that right? 14:13:48</p> <p>5 A. I'm not a plaintiff nor an attorney. 14:13:48</p> <p>6 Q. I'm just telling you that that's the point of it. 14:13:51</p> <p>7 In giving an opinion here where you say "It's my best 14:13:52</p> <p>8 professional judgment as a board-certified toxicologist that 14:13:56</p> <p>9 Mr. Ingram was exposed to a significant amount of arsine at 14:14:00</p> <p>10 the time of the accident and that his current medical problems 14:14:03</p> <p>11 are due to that exposure," do you still feel that way? 14:14:05</p> <p>12 A. Let's deconstruct the compound question there. That 14:14:09</p> <p>13 he had significant exposure. In this case we have your bright 14:14:14</p> <p>14 standard - we captured the sentinel thing you would see in 14:14:19</p> <p>15 terms of laboratory values. 14:14:27</p> <p>16 Q. And as I understand - 14:14:27</p> <p>17 MR. WARD: No, I insist you allow him to finish 14:14:30</p> <p>18 his answer. 14:14:33</p> <p>19 MR. TUCKER: I want to ask him one thing, and that 14:14:34</p> <p>20 was - 14:14:35</p> <p>21 MR. WARD: Save it. 14:14:36</p> <p>22 BY MR. TUCKER: 13:40:48</p> <p>23 Q. To refresh your memory, you told me that a 14:14:36</p> <p>24 significant amount meant an amount that may have a health 14:14:39</p> <p>25 effect, right? 14:14:43</p>
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<p>1 Let's see what it was you called it. 14:12:41</p> <p>2 MR. WARD: It's what you called it. 14:12:44</p> <p>3 THE WITNESS: Well, I did. 14:12:47</p> <p>4 Q. In your report you call it the "classic triad of 14:12:47</p> <p>5 effects." 14:12:51</p> <p>6 MR. WARD: Okay. We'll go with it. 14:12:52</p> <p>7 BY MR. TUCKER: 13:40:48</p> <p>8 Q. Did he have any of the classic triad effects? 14:12:56</p> <p>9 MR. WARD: Could the record reflect his smile. 14:13:01</p> <p>10 THE WITNESS: I don't think there's any way to 14:13:05</p> <p>11 reflect that smile in the record. 14:13:08</p> <p>12 MR. WARD: Well, I'll just describe it as beng 14:13:11</p> <p>13 from one ear lobe to the other. 14:13:11</p> <p>14 A. No signs, no, sir. 14:13:14</p> <p>15 BY MR. TUCKER: 13:40:48</p> <p>16 Q. Well, you've been a toxicologist for a long time, 14:13:16</p> <p>17 right? 14:13:20</p> <p>18 A. Yes, sir. 14:13:20</p> <p>19 Q. And you testified in a lot of cases, right? 14:13:20</p> <p>20 A. I've testified in a number of cases; not a lot of 14:13:24</p> <p>21 cases. 14:13:27</p> <p>22 Q. And you don't testify very much for the plaintiff? 14:13:27</p> <p>23 A. No, very rarely. Much more predominantly for 14:13:30</p> <p>24 defense. 14:13:35</p> <p>25 Q. Do you realize that as a plaintiff it's your 14:13:36</p>	<p>1 THE WITNESS: Could you read back the question? 14:15:18</p> <p>2 THE COURT REPORTER: "In giving an opinion here 14:15:18</p> <p>3 where you say "It's my best professional judgment as a 14:15:54</p> <p>4 board-certified toxicologist that Mr. Ingram was 14:15:58</p> <p>5 exposed to a significant amount of arsine at the 14:16:00</p> <p>6 time of the accident and that his current medical 14:16:03</p> <p>7 problems are due to that exposure," do you still feel 14:16:05</p> <p>8 that way? 14:16:09</p> <p>9 A. There are two questions in that one, compound again. 14:15:19</p> <p>10 The first is he has significant exposure. Yes, I do feel he 14:15:22</p> <p>11 has significant exposure there. There is evidence to support 14:15:26</p> <p>12 that, the proximity and so forth. 14:15:29</p> <p>13 The second is that some portion of his current 14:15:36</p> <p>14 medical problems are associated with that exposure, yes, sir, 14:15:39</p> <p>15 I do, considering them in fullness. 14:15:44</p> <p>16 Q. Which portion? 14:15:47</p> <p>17 A. The numbness is likely. The headaches, I take the 14:15:49</p> <p>18 point that he -- I didn't know about the pool hall, thank 14:15:56</p> <p>19 you -- that he has a good history of reporting regularly to 14:16:03</p> <p>20 physicians in terms of headaches and such and reporting 14:16:09</p> <p>21 whatever he feels is wrong with him. The numbness wasn't 14:16:12</p> <p>22 there before and is there after. 14:16:18</p> <p>23 Q. Is his numbness self-reported or confirmed by 14:16:27</p> <p>24 electromyography? 14:16:34</p> <p>25 A. Myography. 14:16:34</p>

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<p>1 Q. Myography. Either one of those things? 14:16:36</p> <p>2 A. Numbness by definition is self-reported. You can 14:16:37</p> <p>3 test -- with a pin test you can do it. 14:16:41</p> <p>4 Q. Is there any confirmation by pin test or EMG of any 14:16:43</p> <p>5 loss of nerve conductivity which is another way of saying 14:16:47</p> <p>6 "numbness"? 14:16:51</p> <p>7 A. No, sir. To my knowledge, that test has not been 14:16:51</p> <p>8 done, neither test has been done. 14:16:58</p> <p>9 Q. When did that self-reported symptom start? 14:17:01</p> <p>10 A. The reported numbness starts after the time of the 14:17:04</p> <p>11 accident. There's no reports of numbness before. 14:17:30</p> <p>12 Q. Who did he report it to and when was it? 14:17:32</p> <p>13 A. In the subsequent literature -- and it's not just 14:17:41</p> <p>14 this Dr. Hastings piece -- there are reports of experiencing 14:18:09</p> <p>15 numbness several times. 14:18:13</p> <p>16 Q. Where? 14:18:15</p> <p>17 (The witness reviewed records from 2:18 p.m. to 14:19:43</p> <p>18 2:25 p.m.) 14:19:43</p> <p>19 BY MR. TUCKER: 14:19:52</p> <p>20 Q. Have you found any numbness yet, sir? 14:25:22</p> <p>21 A. I found paresthesias, pins and needles. I have 14:25:25</p> <p>22 found nothing in the medical records. Paresthesias generally 14:25:31</p> <p>23 is an element of numbness. You know what that is? 14:25:35</p> <p>24 Q. Yes. 14:25:38</p> <p>25 A. You've got a limb falling asleep and you sit on it. 14:25:39</p>	<p>1 there. To be honest with you, sir, I'm not finding a 14:28:14</p> <p>2 discharge summary with a diagnosis, per se. I'm seeing a 14:28:47</p> <p>3 report of symptoms. I'm seeing some notes off to the right of 14:28:51</p> <p>4 different things. I'm seeing some -- it's not differentiated 14:28:57</p> <p>5 as being a diagnosis. 14:29:03</p> <p>6 Q. Is that a hospital or doctor record? 14:29:04</p> <p>7 A. Family Medical Services. I would assume -- Family 14:29:09</p> <p>8 Medical Services sounds like a doctor's record. 14:29:12</p> <p>9 Q. Did they prescribe anything for him? 14:29:15</p> <p>10 A. They list his medicines. Here (indicating). They 14:29:17</p> <p>11 give him Benicar, hypertension; they give him samples of 14:29:29</p> <p>12 Benicar. And then on the -- so what they prescribe for him 14:29:39</p> <p>13 here -- oops, tell him to continue his Zyprexa. 14:29:46</p> <p>14 Q. What's Zyprexa? 14:29:52</p> <p>15 A. Zyprexa is a -- an atypical antipsychotic. 14:29:55</p> <p>16 Q. What is an "atypical antipsychotic"? 14:30:09</p> <p>17 A. It's a drug that may be used for depression, but it 14:30:16</p> <p>18 also shows efficacy for a wider range of claims. 14:30:21</p> <p>19 Q. What else did they give him? 14:30:27</p> <p>20 A. Well, he's on -- that's what -- they say "Continue 14:30:31</p> <p>21 the Zyprexa," so he's already on it. They're continuing the 14:30:36</p> <p>22 Lipitor for elevated cholesterol. He already has a 14:30:41</p> <p>23 prescription for Benicar which is for blood pressure, HPN, 14:30:47</p> <p>24 hypertension. They give him more samples of Benicar for 14:30:51</p> <p>25 hypertension. 14:30:55</p>
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<p>1 Q. Paresthesias is the only thing? 14:25:44</p> <p>2 A. Yes, sir. 14:25:48</p> <p>3 Q. When was that? 14:25:48</p> <p>4 A. This is 19 February of '03. 14:26:00</p> <p>5 Q. That's the first time that was reported? 14:26:02</p> <p>6 A. First time I see it. 14:26:05</p> <p>7 Q. Who was that reported to? What doctor? What day 14:26:07</p> <p>8 was that? February what? 14:26:14</p> <p>9 A. February 19th. You mean I've got to read this guy's 14:26:15</p> <p>10 signature? 14:26:21</p> <p>11 Q. Uh-huh (yes). 14:26:23</p> <p>12 A. Here it is. Chorley and -- 14:26:24</p> <p>13 Q. Dr. Chorley? 14:26:28</p> <p>14 A. Joyce something, Dr. Chorley. 14:26:32</p> <p>15 Q. What was the reason he presented to the doctor on 14:26:35</p> <p>16 February 19th, 2003? 14:26:37</p> <p>17 A. "Chief complaint: Severe headaches and patient went 14:26:40</p> <p>18 to emergency room on Monday." 14:26:47</p> <p>19 Q. So the complaint was what, severe headaches; is that 14:26:50</p> <p>20 right? 14:27:03</p> <p>21 A. "Episodes of dizziness, tingling in fingers." 14:27:03</p> <p>22 There's a list. But it appears -- in fact, it doesn't appear 14:27:11</p> <p>23 there. The chief complaint is defined as severe headaches. 14:27:20</p> <p>24 Q. What was the diagnosis made by Dr. Chorley? 14:27:25</p> <p>25 A. And I have a Scott Rahhal. But let's go back from 14:27:34</p>	<p>1 There is also a notation of -- which would fit into 14:30:58</p> <p>2 the field where you would do -- where you would do 14:31:05</p> <p>3 prescriptions, but I can't follow it as such. It's "NSR 14:31:09</p> <p>4 plus," and that may be an antisteroidal in the prescription 14:31:17</p> <p>5 field, but I can't read it. 14:31:23</p> <p>6 Q. What did it do for his headache? 14:31:26</p> <p>7 A. I'm sorry? 14:31:30</p> <p>8 Q. What did they do for his headache? That's why he 14:31:30</p> <p>9 went in. 14:31:34</p> <p>10 A. For his headache here, I'm not seeing that they 14:31:34</p> <p>11 prescribe anything unless, in fact, that last NS is a 14:31:38</p> <p>12 nonsteroidal. 14:31:43</p> <p>13 Q. Did they take any particular significance to the 14:31:44</p> <p>14 facts he had pins and needles in his fingers? 14:31:47</p> <p>15 A. No, sir. 14:31:53</p> <p>16 Q. Is Zyprexa also a treatment for bipolar personality? 14:31:54</p> <p>17 A. That's one use, yes, sir. 14:31:58</p> <p>18 Q. Any other instances anywhere in his medical record 14:32:01</p> <p>19 of anything that could be remotely related with anything 14:32:04</p> <p>20 having to do with his nerves other than, of course, the 14:32:09</p> <p>21 antipsychotic we discussed? 14:32:13</p> <p>22 A. I'm sorry. Would you say that again, please? 14:32:17</p> <p>23 MR. TUCKER: Would you read that again? 14:32:17</p> <p>24 THE COURT REPORTER: "Any other instances anywhere 14:32:01</p> <p>25 in his medical record of anything that could be 14:32:03</p>

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<p>1 remotely related with anything having to do with his 14:32:05</p> <p>2 nerves other than, of course, the antipsychotic we 14:32:11</p> <p>3 discussed?" 14:32:40</p> <p>4 A. And the paresthesias. 14:32:40</p> <p>5 BY MR. TUCKER: 14:32:01</p> <p>6 Q. Pins and needles? 14:32:43</p> <p>7 A. It's mixed with numbness, paresthesias. 14:32:46</p> <p>8 Q. How many times did he get -- how many times did you 14:32:48</p> <p>9 find pins and needles in his record? 14:32:53</p> <p>10 A. That one time. 14:32:55</p> <p>11 Q. Anything other that was related to any kind of 14:32:56</p> <p>12 paresthesias or numbness other than the one instance of pin 14:33:01</p> <p>13 and needles in 2003 when he reported to his treating physician 14:33:04</p> <p>14 for a bad headache? Any others? 14:33:09</p> <p>15 A. Any other? 14:33:12</p> <p>16 Q. Numbness, paresthesias or pins and needles or 14:33:13</p> <p>17 whatever you want to call it? 14:33:18</p> <p>18 A. I'm looking at central states -- I'm looking at 14:33:19</p> <p>19 essentially three sets of records here, and I'm not going to 14:33:22</p> <p>20 Dr. Hastings in this particular case, his examination. And 14:33:27</p> <p>21 paresthesias, no; pain, yes; pain disorder or whatever. 14:33:37</p> <p>22 Q. We're talking about numbness, paresthesias, pins and 14:33:44</p> <p>23 needles, right? That's the numbness you're talking about in 14:33:48</p> <p>24 your report, isn't it? 14:33:52</p> <p>25 A. Yes. And I was looking specifically prior to when 14:33:53</p>	<p>1 THE COURT REPORTER: "So would it be fair to say 14:35:02</p> <p>2 that that event in February of 2003, when he went in 14:35:05</p> <p>3 for a headache evaluation and mentioned that he had 14:35:09</p> <p>4 pins and needle findings in his fingers, is there any 14:35:12</p> <p>5 information that that's any more than a coincidence 14:35:17</p> <p>6 that came that one time and never seen again?" 14:35:20</p> <p>7 A. And disregarding -- if I look at that -- all of the 14:35:57</p> <p>8 stuff prior to Dr. Hastings and what I see today, no. 14:36:01</p> <p>9 BY MR. TUCKER: 14:36:06</p> <p>10 Q. And if you have a migraine headache, sir, is pins 14:36:06</p> <p>11 and needles a symptom that sometimes is reported by a patient 14:36:11</p> <p>12 that's suffering from a migraine headache? 14:36:16</p> <p>13 A. In the limbs, it's not very common, no, sir. 14:36:18</p> <p>14 Q. But it does happen, doesn't it? That is a symptom 14:36:22</p> <p>15 that's reported, a migraine, right? 14:36:26</p> <p>16 A. I'm sorry? 14:36:29</p> <p>17 Q. That's a symptom that can be reported with migraine 14:36:30</p> <p>18 headache from time to time? 14:36:34</p> <p>19 A. From time to time, but usually not in the limbs. 14:36:36</p> <p>20 It's very uncommon in the limbs. 14:36:37</p> <p>21 Q. But sometimes; is that correct? 14:36:39</p> <p>22 A. Yes, sir, it does sometimes happen. 14:36:40</p> <p>23 Q. If you were to read that record, did you find any 14:36:43</p> <p>24 reference by those physicians and their diagnosis that what 14:36:46</p> <p>25 this man what was presenting with was a migraine headache in 14:36:51</p>
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<p>1 he saw Dr. Hastings. 14:33:57</p> <p>2 Q. As a board-certified toxicologist is one incident of 14:33:59</p> <p>3 an "Oh, by the way" complaint or an "Oh, by the way" statement 14:34:03</p> <p>4 to your treating physician when you're in there for something 14:34:06</p> <p>5 else a year and a half after something occurs and the 14:34:09</p> <p>6 statement is "pins and needles" and there is no follow-up of 14:34:15</p> <p>7 any kind whatsoever and that's the only isolated report of any 14:34:18</p> <p>8 kind, is that a sufficient finding of fact on which for you to 14:34:22</p> <p>9 base a conclusion that this man was exposed to a significant 14:34:25</p> <p>10 amount of arsine on July of 2001? 14:34:28</p> <p>11 MR. WARD: Object to the form. Misstates the 14:34:31</p> <p>12 record. 14:34:33</p> <p>13 A. No, sir. I am responding in terms of -- in terms of 14:34:35</p> <p>14 the stuff I have in front of me. And I specifically excluded 14:34:48</p> <p>15 in this case any of the stuff that's in Dr. Hastings' 14:34:58</p> <p>16 evaluation. 14:35:01</p> <p>17 BY MR. TUCKER: 14:32:01</p> <p>18 Q. So would it be fair to say that that event in 14:32:43</p> <p>19 February of 2003, when he went in for a headache evaluation 14:35:06</p> <p>20 and mentioned that he had pins and needle findings in his 14:35:10</p> <p>21 fingers, is there any information that that's any more than a 14:35:16</p> <p>22 coincidence that came that one time and never seen again? 14:35:19</p> <p>23 MR. WARD: Object to the form of the question. 14:35:23</p> <p>24 Misstates the record. 14:35:25</p> <p>25 THE WITNESS: Can you reread that ma'am? 14:35:55</p>	<p>1 February 2003? 14:36:55</p> <p>2 A. That was one thing that was listed, migraine, 14:36:56</p> <p>3 hypertension and a range of things. 14:36:59</p> <p>4 Q. So he presented with the kind of headache that 14:37:01</p> <p>5 sometimes, not often, but sometimes also presents with pins 14:37:04</p> <p>6 and needles in the fingers, right? 14:37:07</p> <p>7 A. No personal experience, but yes, sir. 14:37:09</p> <p>8 Q. As I recall your definition of a "significant amount 14:37:12</p> <p>9 of arsine" was an amount that may have a health effect; is 14:37:27</p> <p>10 that right? 14:37:31</p> <p>11 A. Yes, sir. 14:37:31</p> <p>12 Q. And we've looked at this man's plasma free 14:37:32</p> <p>13 hemoglobin reports on the 11th and 12th of July of 2001, and 14:37:36</p> <p>14 on those two days, the highest reading was 33 milligrams per 14:37:40</p> <p>15 deciliter; is that right? 14:37:47</p> <p>16 A. Yes, sir. 14:37:50</p> <p>17 Q. Now, is that what you're meaning when you tell me 14:37:50</p> <p>18 that this man had a significant amount of -- exposed to a 14:37:55</p> <p>19 significant amount of arsine? Is that the health effect to 14:37:58</p> <p>20 which you're referring? 14:38:01</p> <p>21 A. That is the one thing, yes, sir. 14:38:02</p> <p>22 Q. Are you referring to any other health effect besides 14:38:05</p> <p>23 that one? 14:38:09</p> <p>24 A. That's my best one indicator of it, yes, sir. 14:38:09</p> <p>25 Q. Well, that seems like -- 14:38:17</p>

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1 A. — for the acute exposure. 14:38:21  
 2 Q. I would like you to try and answer that yes or no, 14:38:23  
 3 if you could. 14:38:27  
 4 THE WITNESS: Okay. Please read the question 14:38:27  
 5 back. 14:38:27  
 6 THE COURT REPORTER: "Now, is that what you're 14:37:50  
 7 meaning when you tell me that this man had a 14:37:52  
 8 significant amount of — exposed to a significant 14:37:55  
 9 amount of arsine? Is that the health effect to which 14:37:58  
 10 you're referring?" 14:38:01  
 11 A. In terms of the acute exposure, yes, sir. 14:38:53  
 12 BY MR. TUCKER: 14:38:55  
 13 Q. Now, do you have any opinion with respect to any 14:38:55  
 14 exposure for this gentleman other than the acute exposure 14:38:57  
 15 which is the event of July 11th? 14:39:01  
 16 A. I have not evaluated the record for that, sir. 14:39:03  
 17 Q. We're going to move now to the next gentleman. 14:39:05  
 18 We're going to look at Mr. Joe Sumter. Mr. Sumter, I will 14:39:09  
 19 tell you for your finding purposes is Number 30, Exhibit 14:39:26  
 20 Number 30. Would you look through your records of Mr. Sumter, 14:39:32  
 21 please? 14:41:09  
 22 A. Yes, sir, that's what I'm doing. 14:41:10  
 23 Q. Good. 14:41:12  
 24 (The witness reviewed records from 2:41 p.m. to 14:42:13  
 25 2:42 p.m.) 14:42:13

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1 BY MR. TUCKER: 14:38:55  
 2 Q. Sir, are you ready to talk about Mr. Sumter now? 14:38:55  
 3 A. At 5:00 I turn into a pumpkin. 15:02:18  
 4 Q. Then I'll turn you into a pie. Mr. Sumter, you have 15:02:21  
 5 his — let me kind of cut to the chase on this business. 15:02:27  
 6 Let's just go to his medical records. Would you look at his 15:02:33  
 7 hospital records? 15:02:37  
 8 A. Yes, sir. 15:02:38  
 9 Q. Look at his discharge summary, please. 15:02:39  
 10 A. I can't do that. 15:02:43  
 11 Q. You don't have them? 15:02:45  
 12 A. I don't have them printed with me. 15:02:46  
 13 Q. What do you have printed? 15:02:49  
 14 A. What I printed here are — with Mr. Sumter's being 15:02:50  
 15 back towards the back of the pie — arranged alphabetically. 15:02:59  
 16 And you may have noticed earlier in the alphabet, you got 15:03:05  
 17 thicker bunches, and then I said, "Well, I'm killing too many 15:03:10  
 18 trees." 15:03:10  
 19 Dr. Hastings, which I did check against — the data 15:03:11  
 20 that's in here, I did check against the medical records. I 15:03:16  
 21 have Alternative Medicine of Tulsa. Okay? And I have Family 15:03:19  
 22 Medical. 15:03:24  
 23 Q. But you didn't download his actual medical records 15:03:25  
 24 from the place he went after the incident? 15:03:28  
 25 A. I didn't print them. 15:03:31

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1 Q. All right. 15:03:33  
 2 A. I read them on the screen. 15:03:34  
 3 Q. Well, you say in your conclusion here in your "best 15:03:36  
 4 professional judgment, Mr. Sumter was exposed to a significant 15:03:39  
 5 amount of arsine at the time of the accident." 15:03:41  
 6 A. Yes, sir. 15:03:43  
 7 Q. "And that his current and marked medical problems 15:03:43  
 8 are due to that exposure"; is that correct? 15:03:46  
 9 A. Yes, sir. 15:03:48  
 10 Q. I'm going to hand you and let you look at my 15:03:49  
 11 discharge summary for Mr. Sumter from Saint Francis Hospital, 15:03:53  
 12 the discharge summary of July the 12th, 2001. I would like to 15:03:58  
 13 give you an opportunity to review the history of the present 15:04:03  
 14 illness and the hospitalization and the discharge. 15:04:08  
 15 A. This is Dr. Smith's. 15:04:14  
 16 Q. That's a medical doctor at Saint Francis Hospital, a 15:04:19  
 17 real doctor. 15:04:23  
 18 A. Yes, sir. 15:04:25  
 19 Q. Now, when he presented, what exposure does he say he 15:04:25  
 20 had? 15:04:32  
 21 A. Dr. Smith says "was exposed to arsine yesterday at 15:04:32  
 22 the Port of Catoosa." 15:04:44  
 23 Q. Let me interrupt you. When you said, "Dr. Smith 15:04:45  
 24 said" — didn't you mean to say that Joe Sumter reported to 15:04:47  
 25 Dr. Smith according to Dr. Smith's official record at the 15:04:51

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1 hospital? 15:04:54  
 2 MR. WARD: I'll object whether it was Dr. Smith's 15:04:55  
 3 report that that's what the patient said. 15:04:56  
 4 A. Yeah. This is — this is Dr. Smith's dictation, so. 15:04:59  
 5 BY MR. TUCKER: 14:38:55  
 6 Q. Is he reporting what Mr. Sumter — what he is saying 14:38:55  
 7 Mr. Sumter told him? 15:05:09  
 8 A. It doesn't say that, sir. 15:05:10  
 9 Q. Where does the history come from? 15:05:12  
 10 A. It would — it should come from the medical records, 15:05:15  
 11 but these aren't — this is what Dr. Smith said, this is his 15:05:19  
 12 dictated summary. And I am aware of the fact that in the case 15:05:25  
 13 of this particular individual, the record reflects things that 15:05:30  
 14 are not in the summary. 15:05:36  
 15 Q. Let's talk about those as we get to them. What's 15:05:38  
 16 the history of the present illness? 15:05:41  
 17 A. "The patient is a 41-year-old male and was exposed 15:05:47  
 18 to arsine yesterday at the Port of Catoosa for a very brief 15:05:51  
 19 period of time. He moved up wind as soon as he was aware of 15:05:55  
 20 the odor." 15:05:58  
 21 Q. Now, stop there. "He was exposed for a very brief 15:05:59  
 22 period of time. He moved up wind as soon as he was aware of 15:06:03  
 23 the odor." It sounds like he took pretty quick action, 15:06:07  
 24 doesn't it? 15:06:08  
 25 A. That's what it says, yes, sir. 15:06:08

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1 Q. Sounds like he didn't have much time for an 15:06:10  
 2 opportunity for exposure, does it? 15:06:15  
 3 A. Yes, sir. 15:06:17  
 4 Q. You talked about dose and duration. We don't know 15:06:17  
 5 the dose for Mr. Sumter or anyone else or if there was one for 15:06:20  
 6 sure, do we? 15:06:24  
 7 A. We don't know. 15:06:25  
 8 Q. Well, for Mr. Sumter, at least we know the duration 15:06:26  
 9 was a short duration? 15:06:30  
 10 MR. WARD: No, we don't. Object to the form. 15:06:31  
 11 A. I have other -- 15:06:33  
 12 BY MR. TUCKER: 14:38:55  
 13 Q. Based upon what you just read. 14:38:55  
 14 A. If this was the only information I had, that would 15:06:39  
 15 be accurate. But I have other information -- 15:06:42  
 16 Q. We're going to get to that. 15:06:45  
 17 MR. WARD: We never seem to get to that other 15:06:50  
 18 information that's part of it. 15:06:55  
 19 BY MR. TUCKER: 14:38:55  
 20 Q. Well, if counsel says we never get to the other 14:38:55  
 21 information, what is the other information that tells you he 15:07:00  
 22 was there for a very short period of time? What else do you 15:07:03  
 23 have that contradicts that? 15:07:07  
 24 MR. WARD: It doesn't say that. 15:07:09  
 25 MR. TUCKER: Let me read it for counsel. 15:07:11

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1 BY MR. TUCKER: 14:38:55  
 2 Q. The doctor claims -- he said "He was exposed for a 14:38:55  
 3 very brief period of time and moved up wind as soon as he was 15:07:19  
 4 aware of the odor." I would like to know what do you have 15:07:22  
 5 contrary to that? That was on July 11th, 2001, when he 15:07:25  
 6 reported to the hospital after this event. 15:07:38  
 7 A. "He was in the plant doing his usual and customary 15:07:39  
 8 work activities. He indicates that it was very hot that day 15:07:39  
 9 and that the bay doors were open, which did face toward the 15:07:41  
 10 adjacent Solkatronics plant. He indicates that during the 15:07:46  
 11 course of work activities he heard a 'thump.' He saw a cloud 15:07:51  
 12 arise a short time later from the vicinity of the Solkatronic 15:07:56  
 13 plant. He indicates that shortly thereafter he did have the 15:07:57  
 14 awareness of a very strong unpleasant smell, which he 15:08:01  
 15 describes as 'garlic-like' smell and did experience a 15:08:07  
 16 'metallic' taste. 15:08:11  
 17 "He did have the onset of symptoms that included 15:08:13  
 18 development of irritation and discomfort involving his throat 15:08:17  
 19 and eyes and did shortly thereafter develop head pain and 15:08:18  
 20 headache. 15:08:22  
 21 "It was subsequently determined that there was a 15:08:27  
 22 toxic arsine gas explosion in the adjacent Solkatronics plant. 15:08:29  
 23 His employment was evacuated with the initial evacuation being 15:08:34  
 24 to a place outside of their building to a position across the 15:08:36  
 25 street." Okay. So he crosses the road and he moves a little 15:08:39

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1 bit further to the west. Okay. So he's gone from being 15:08:43  
 2 north, northwest to a little bit further in a western access, 15:08:48  
 3 a couple of degrees, perhaps. 15:08:54  
 4 "Employees were kept in this location for 15:08:58  
 5 approximately one hour, to the best of the patient's 15:09:01  
 6 recollection. He was subsequently moved to a second location 15:09:05  
 7 down the street and at a corner and were kept at this location 15:09:07  
 8 30 minutes or more before being moved once again to a third 15:09:10  
 9 evacuation area near the human resource offices. 15:09:14  
 10 "The patient does indicate that the first two 15:09:19  
 11 evacuation locations apparently were unfortunately downwind 15:09:21  
 12 from the toxic arsine gas release site." 15:09:25  
 13 And that would match -- if this date was good, that 15:09:26  
 14 would match what we have there. 15:09:30  
 15 Q. The first two evacuation locations? 15:09:30  
 16 A. Yes, sir. 15:09:33  
 17 Q. What was the second location? 15:09:34  
 18 A. "Subsequently moved to a second location down the 15:09:35  
 19 street and at a corner and was kept at this location for 30 15:09:39  
 20 minutes or more before being moved to a third evacuation area 15:09:43  
 21 near the human resources office." So there's one, two and 15:09:47  
 22 three. 15:09:51  
 23 Q. What are you reading from? 15:09:51  
 24 A. This is Dr. Hastings' summary. 15:09:52  
 25 Q. Dr. Hastings? 15:09:55

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1 A. Yes, sir. 15:09:56  
 2 Q. That's Dr. Hastings' summary? 15:09:57  
 3 A. Yes, sir. 15:10:00  
 4 Q. Any treating physician's summary? Any information 15:10:01  
 5 from any treating physician about that? 15:10:06  
 6 A. I checked what was here versus what was on the 15:10:08  
 7 CD-ROM, and then I went through what the CD-ROM had and 15:10:13  
 8 printed this. 15:10:20  
 9 Q. Are you saying the CD-ROM history is going to say 15:10:20  
 10 exactly what Hastings says or close to it? 15:10:24  
 11 A. There is information that matches this. 15:10:27  
 12 Q. How long was it before they were evacuated across 15:10:29  
 13 the street to the west, or evacuated to the west? 15:10:33  
 14 A. Approximately one hour. 15:10:43  
 15 Q. No, evacuated to the first evacuation point. How 15:10:50  
 16 long before they went to the first evacuation point? 15:10:55  
 17 A. It doesn't state. 15:10:58  
 18 Q. Okay. 15:11:03  
 19 A. It states they spent an hour subsequent to that. 15:11:05  
 20 Q. After they were evacuated to the west? 15:11:09  
 21 A. Yes, sir, across the street. 15:11:12  
 22 Q. So when they were evacuated to the west, apparently 15:11:13  
 23 someone thought that was a safe place to move them to; is that 15:11:18  
 24 correct? 15:11:22  
 25 A. The building and the site, yes, sir. 15:11:22

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<p style="text-align: right;">Page 313</p> <p>1 Q. Would you agree someone thought it was a safe place 15:11:23</p> <p>2 to move them or they wouldn't have moved them to that 15:11:26</p> <p>3 location? 15:11:29</p> <p>4 A. Someone made a judgment. 15:11:30</p> <p>5 Q. Do you know what that judgment was based on? 15:11:30</p> <p>6 A. Probably further from the location. 15:11:32</p> <p>7 Q. Do you know what it was based on? 15:11:32</p> <p>8 A. No, sir. 15:11:34</p> <p>9 Q. Do you know who made the judgment? 15:11:34</p> <p>10 A. No, sir. 15:11:38</p> <p>11 Q. Do you know whether the authorities directed that 15:11:38</p> <p>12 they move there? 15:11:41</p> <p>13 A. No, sir. But I do know that if we follow it on the 15:11:41</p> <p>14 map, that, in fact, is further into the direction that we have 15:11:47</p> <p>15 here presented in the air flow at the prevailing wind. 15:11:51</p> <p>16 Q. I thought you said the air flow was north, 15:11:55</p> <p>17 northwest? 15:11:59</p> <p>18 A. North, northwest. And when we move -- 15:11:59</p> <p>19 Q. You just went west; you didn't go further east? 15:12:03</p> <p>20 A. When we say further to the west, which would be a 15:12:06</p> <p>21 few more degrees relative to the northwest than north. Okay? 15:12:14</p> <p>22 Q. So the new evacuation location was west, northwest? 15:12:21</p> <p>23 A. No, sir. As a naval officer, we would track it or 15:12:26</p> <p>24 as any one reporting position you'd track it -- you always do 15:12:31</p> <p>25 the predominant northwest, closer to north than northwest. 15:12:34</p>	<p style="text-align: right;">Page 315</p> <p>1 8:00 that evening. 15:15:38</p> <p>2 Q. What are you looking at? 15:15:39</p> <p>3 A. I'm looking at Dr. Hastings' summary, but if we can 15:15:41</p> <p>4 see the medical summary of the labs. 15:15:43</p> <p>5 Q. I believe I asked you about your report. Do you 15:15:45</p> <p>6 want to listen to the question again? 15:15:45</p> <p>7 MR. TUCKER: Ma'am, would you read me that? 15:15:45</p> <p>8 THE COURT REPORTER: "Did you make any finding in 15:15:11</p> <p>9 your report for Mr. Sumter as you did for Mr. Ingram 15:15:13</p> <p>10 of any hemolysis?" 15:15:21</p> <p>11 A. No, sir, in this paragraph I do not mention that. 15:15:49</p> <p>12 BY MR. TUCKER: 15:16:13</p> <p>13 Q. Isn't hemolysis the cardinal sign for arsine 15:16:13</p> <p>14 exposure? 15:16:16</p> <p>15 A. We've been through this a number of times before. 15:16:17</p> <p>16 Q. And the answer always comes up yes, doesn't it? 15:16:20</p> <p>17 A. No, sir. You propose it is, the test question, and 15:16:23</p> <p>18 I always say "not exactly." It is, in fact, a -- if I had to 15:16:27</p> <p>19 look for one most primary thing, it would be it. But it's not 15:16:35</p> <p>20 a black or white thing. You may see it or you may not. It's 15:16:40</p> <p>21 the single most significant thing you should look for. 15:16:44</p> <p>22 Q. The next thing you would look for would be that 15:16:47</p> <p>23 classic triad of effects of dark urine, abdominal pain and 15:16:50</p> <p>24 jaundice? 15:16:54</p> <p>25 A. For an acute exposure, yes, sir. 15:16:55</p>
<p style="text-align: right;">Page 314</p> <p>1 Q. Look again at the discharge summary and tell me what 15:12:40</p> <p>2 the treating physician at the hospital at the time of the 15:12:44</p> <p>3 event in July of 2001 and 2002, what did he say about the 15:12:48</p> <p>4 man's laboratory tests? 15:12:57</p> <p>5 A. "Remained negative for hemolysis." 15:12:59</p> <p>6 Q. I'm going to hand you the history and physical when 15:13:01</p> <p>7 the man arrived at the hospital. And particularly I'll direct 15:13:28</p> <p>8 your attention to what I'm going ask you the question about, 15:13:41</p> <p>9 that is at the time of his admission to the hospital, did he 15:13:44</p> <p>10 have the classic triad? 15:13:47</p> <p>11 A. Okay. "A little headache but no shortness of 15:13:49</p> <p>12 breath, nausea or vomiting. Denies any jaundice or dark 15:13:58</p> <p>13 urine." 15:14:03</p> <p>14 Q. No jaundice, no dark urine, no report of abdominal 15:14:03</p> <p>15 pain; is that right? 15:14:08</p> <p>16 A. That is correct. 15:14:09</p> <p>17 Q. If you had found anything in the medical records 15:14:11</p> <p>18 that demonstrated any abnormality in the blood or urine -- 15:14:15</p> <p>19 A. I'm sorry. If you would let me go ahead and finish 15:14:20</p> <p>20 reading it, please. 15:14:23</p> <p>21 Q. Oh, sure. 15:14:24</p> <p>22 A. Okay. Thank you, sir. 15:15:10</p> <p>23 Q. Did you make any finding in your report for 15:15:11</p> <p>24 Mr. Sumter as you did for Mr. Ingram of any hemolysis? 15:15:16</p> <p>25 A. Yes, sir. If we can see the labs for 7:00, almost 15:15:28</p>	<p style="text-align: right;">Page 316</p> <p>1 Q. You didn't report that he had that? 15:16:55</p> <p>2 A. No, sir. 15:16:59</p> <p>3 Q. And, in fact, the record didn't reflect that he had 15:16:59</p> <p>4 that, correct? 15:17:04</p> <p>5 A. Well, "Reports having fatigue, numbness, short-term 15:17:05</p> <p>6 memory loss and motor neuropathy, paren, confirmed by a 15:17:11</p> <p>7 neurological exam and developing after the accident, closed 15:17:17</p> <p>8 paren, in the current time frame some three years after the 15:17:20</p> <p>9 accident." 15:17:23</p> <p>10 Q. So what you don't talk about is the fact that the 15:17:25</p> <p>11 man has reported having hemolysis at the time of the event or 15:17:28</p> <p>12 having any of the three parts of the classic triad at the time 15:17:32</p> <p>13 of the event; is that correct? 15:17:36</p> <p>14 A. Yes, sir. 15:17:37</p> <p>15 Q. Do you have any information of any abnormalities at 15:17:38</p> <p>16 any time with his urine, any abnormalities at any time in the 15:17:43</p> <p>17 hospital with hemoglobinuria, to be more precise? 15:17:47</p> <p>18 Even looking at Dr. Hastings' report -- I know you 15:17:54</p> <p>19 didn't print out the hospital's reports. You relied on 15:17:54</p> <p>20 Dr. Hastings, the litigation doctor, but -- 15:17:57</p> <p>21 A. No, sir. 15:17:59</p> <p>22 MR. WARD: Object to the form of the question. 15:17:59</p> <p>23 Hastings is an independent medical examiner. 15:18:03</p> <p>24 A. My own objection is your characterization of what I 15:18:06</p> <p>25 said. I didn't rely on Dr. Hastings. I've consistently 15:18:10</p>

36 (Pages 313 to 316)



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1 maintained — I really don't look at Dr. Hastings' summaries 15:18:16  
 2 or conclusions. I looked at the summaries. I looked at the 15:18:20  
 3 medical records. I did not print those out. But, no, it 15:18:23  
 4 would be wrong to characterize that I relied only on 15:18:27  
 5 Dr. Hastings. 15:18:31  
 6 BY MR. TUCKER: 15:16:13  
 7 Q. To make sure I'm clear, the reason you didn't print 15:16:13  
 8 them out was not because it wasn't important but you didn't 15:18:36  
 9 want to kill any more trees? 15:18:39  
 10 A. Yes, sir. The space — paper is our only product. 15:18:40  
 11 Q. Well, if you hadn't noticed that there had been any 15:18:45  
 12 abnormalities in the urine, hemoglobinuria specifically, isn't 15:18:49  
 13 that something you would have noted either in your notes or in 15:18:53  
 14 your report about Mr. Sumter? 15:18:56  
 15 A. My recollection is — to answer your question about 15:18:58  
 16 hemoglobinuria, which is — I think the question you last 15:19:02  
 17 asked, I do not recollect there being anything in the records 15:19:06  
 18 that says there was hemoglobinuria. 15:19:10  
 19 Q. And with respect to hemolysis, if there had been a 15:19:12  
 20 significant elevation of plasma free hemoglobin, wouldn't you 15:19:18  
 21 have put that in your report about Mr. Sumter, since that is 15:19:24  
 22 such an important part of the confirming diagnosis of the 15:19:28  
 23 exposure to arsine? 15:19:31  
 24 A. I didn't note it. I probably should have included 15:19:33  
 25 it in this paragraph summary, but I did not. 15:19:37

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1 Q. And you believe it was a significant elevation. Is 15:19:40  
 2 that what you're telling me? 15:19:42  
 3 A. Yes, sir. 15:19:43  
 4 Q. Well, let's look at — for example, at July 11, 15:19:44  
 5 2001, Saint Francis Hospital Laboratory, and — I want to 15:20:27  
 6 direct your attention to the findings regarding plasma 15:20:50  
 7 hemoglobin. 15:20:52  
 8 MR. WARD: Can the record reflect that you've 15:20:54  
 9 concealed part of that record from his view? 15:20:57  
 10 MR. TUCKER: Only temporarily, Counsel. It will 15:21:00  
 11 all be revealed in the fullness of time. 15:21:03  
 12 MR. WARD: But it is as you've presented it to 15:21:06  
 13 him. 15:21:10  
 14 A. Could you ask your question again, please? 15:21:11  
 15 BY MR. TUCKER: 15:21:15  
 16 Q. Yes. The plasma free hemoglobin level is what? 15:21:15  
 17 A. 111. 15:21:20  
 18 Q. Now, that's at the very bottom level of what you 15:21:29  
 19 consider to be possibly significant, isn't it, or whatever 15:21:35  
 20 phrase you've used before? 15:21:40  
 21 A. That is at the level that I said this definitely I 15:21:41  
 22 would pay attention to — 15:21:47  
 23 Q. Now, what other — 15:21:47  
 24 A. — without making any comparison to change or 15:21:50  
 25 baseline. 15:21:52

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1 Q. What other things about a person's blood when it's 15:21:52  
 2 tested can cause a report to come back of a high number for 15:21:56  
 3 plasma hemoglobin other than plasma hemoglobin? 15:22:01  
 4 A. Depends on the test method that's used to some 15:22:06  
 5 degree. 15:22:11  
 6 Q. Well, what are the methods? 15:22:11  
 7 A. Most labs — now when we do these, we typically use 15:22:14  
 8 automated machines, and most of them are spectra. 15:22:22  
 9 Q. Does that mean light goes through them? 15:22:26  
 10 A. Yeah. What it can do is cause a response to the 15:22:28  
 11 specific thing you're looking for, changes the transmission of 15:22:33  
 12 light through that, the specific frequency. 15:22:36  
 13 Q. So the less light that transmits through there, 15:22:38  
 14 the — that's how it determines the amount of plasma 15:22:44  
 15 hemoglobin, using that electro — whatever it was — photo — 15:22:46  
 16 whatever you said? 15:22:50  
 17 A. Yeah. The absorption of light, and therefore you 15:22:51  
 18 would say the less light that transmits, yes, sir. 15:22:56  
 19 Q. Is there anything about the condition of a patient's 15:23:01  
 20 blood, other than plasma free hemoglobin, that could interfere 15:23:04  
 21 or affect that obstruction of light? 15:23:08  
 22 A. Depending on how the sample was handled, yes, sir. 15:23:12  
 23 Q. Anything else besides how the sample was handled? 15:23:16  
 24 Anything about the nature of the blood itself? 15:23:20  
 25 A. There could be other contaminants that are in there, 15:23:25

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1 other analytes that would make it more — 15:23:38  
 2 Q. What if your blood has a lot of fat in it? 15:23:41  
 3 A. That would be another contaminate. Possibly a high 15:23:44  
 4 level of fat in the sample, a really high level of fat in the 15:23:49  
 5 sample would obviously cut down on — at the level of which 15:23:55  
 6 the fat was absorbed would cut down on the transmission. 15:23:59  
 7 Q. So would a fat blood sample be called a lipemic 15:24:04  
 8 sample or a lipemic specimen? 15:24:12  
 9 A. I'm missing the — 15:24:15  
 10 Q. L-I-P-E-M-I-C? 15:24:16  
 11 A. High and lipid, yes, sir. 15:24:21  
 12 Q. That would be fat blood, right? 15:24:23  
 13 A. That would be one that had a high fat content. 15:24:25  
 14 Q. Would that be the kind that would interfere with the 15:24:27  
 15 accuracy of a plasma hemoglobin test? 15:24:30  
 16 A. It could interfere with a number of things. Again, 15:24:33  
 17 I would have to check the literature on that point. 15:24:35  
 18 Q. Would you agree that a lipemic specimen could cause 15:24:37  
 19 an abnormal high reading on plasma free hemoglobin based upon 15:24:46  
 20 the way the test is performed? 15:24:52  
 21 A. It might lead to elevation, yes, sir. I would have 15:24:55  
 22 to check the specifics on the test. 15:24:59  
 23 Q. Do you know the condition — when you made your 15:25:00  
 24 expert analysis of Mr. Sumter, did you determine whether or 15:25:03  
 25 not he had lipemic blood or fat blood? 15:25:08

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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

<p style="text-align: right;">Page 321</p> <p>1 A. I did check, and as I remember, there was some 15:25:11</p> <p>2 elevated cholesterol levels, blood lipid levels. 15:25:17</p> <p>3 Q. Was it sufficient that the laboratory even made a 15:25:22</p> <p>4 comment on the blood analysis, that this was a lipemic 15:25:26</p> <p>5 specimen? 15:25:30</p> <p>6 A. I don't recollect that in this case specifically. 15:25:31</p> <p>7 Q. Let me show you the area that was previously 15:25:34</p> <p>8 obscured as to not distract you. 15:25:36</p> <p>9 A. Okay. 15:25:46</p> <p>10 Q. Does that identify a lipemic specimen? 15:25:46</p> <p>11 A. Yes, sir. It also says "cleared of" essentially 15:25:51</p> <p>12 of -- we would call them liposomes, fat globules -- "before 15:25:56</p> <p>13 analysis on all tests except" -- and that would have been 15:26:02</p> <p>14 appropriate. 15:26:04</p> <p>15 Q. Do you know of any other blood that was sampled that 15:26:05</p> <p>16 the doctors felt compelled to note that it was a lipemic 15:26:10</p> <p>17 specimen? 15:26:14</p> <p>18 A. I don't recollect any others of these 13, no, sir, 15:26:17</p> <p>19 though I have seen it in laboratory records before. 15:26:22</p> <p>20 Q. But not in this case? 15:26:25</p> <p>21 A. No, sir. 15:26:26</p> <p>22 Q. Let's look at the other indicators. Let's look, for 15:26:27</p> <p>23 example, at haptoglobin. Haptoglobin might even go to zero. 15:26:35</p> <p>24 Is haptoglobin in the normal range for Mr. Sumter at the same 15:26:40</p> <p>25 time he gives this lipemic specimen with blood? 15:26:44</p>	<p style="text-align: right;">Page 323</p> <p>1 Q. So what we have on Sumter at the time he went to the 15:28:50</p> <p>2 hospital, we have everything about this man, every laboratory 15:28:54</p> <p>3 test that could be taken? 15:28:57</p> <p>4 MR. WARD: Object to the form of that. Every 15:28:58</p> <p>5 laboratory test to be taken? 15:28:58</p> <p>6 BY MR. TUCKER: 15:29:04</p> <p>7 Q. Every laboratory test that was taken -- which is 15:29:04</p> <p>8 blood and urine, which is the ones we're talking about -- all 15:29:06</p> <p>9 of those were normal except for one test which showed an 15:29:09</p> <p>10 elevated plasma hemoglobin level of 111 but with the comment 15:29:13</p> <p>11 that the blood was fat; is that right? 15:29:21</p> <p>12 A. Let's go to Day 12 or July 12th, the next day at 15:29:23</p> <p>13 9:00 in the morning, the laboratory test from there. 15:29:30</p> <p>14 Q. Do you have that report, Doctor? Do you have July 15:29:35</p> <p>15 12th with you? 15:29:39</p> <p>16 A. Not printed out, no, sir. I can read it to you, if 15:29:40</p> <p>17 you would like, sir. 15:29:45</p> <p>18 Q. Are you going to read from your report or what 15:29:45</p> <p>19 Dr. Hastings has to say about it? 15:29:45</p> <p>20 A. I can read what Dr. Hastings said about it, 15:29:47</p> <p>21 Dr. Hastings' summary. 15:29:49</p> <p>22 Q. That's kind of secondhand knowledge, isn't it? 15:29:51</p> <p>23 A. It's not the original data, yes, sir. It's 15:29:54</p> <p>24 transcription thereof. 15:29:57</p> <p>25 THE WITNESS: Is this a good time to take a 15:31:47</p>
<p style="text-align: right;">Page 322</p> <p>1 A. Yes, sir. 15:26:47</p> <p>2 Q. Hemoglobin? 15:26:48</p> <p>3 A. You mean blood-bound hemoglobin? 15:26:48</p> <p>4 Q. Yes, sir. Blood-bound hemoglobin, yes, sir. 15:26:53</p> <p>5 A. I can't answer it from this one. The hemoglobin is 15:26:59</p> <p>6 another page. 15:27:23</p> <p>7 Q. I handed you the urine sample, didn't I? 15:27:23</p> <p>8 A. Yes, sir. 15:27:27</p> <p>9 Q. Well, that's not a good thing, is it? Let me show 15:27:28</p> <p>10 you the blood sample there at the bottom. 15:27:33</p> <p>11 A. Thank you, sir. Okay. 15:27:38</p> <p>12 Q. Are any of the other indicators -- 15:27:48</p> <p>13 A. Blood hemoglobin and haptoglobin are both in the 15:27:52</p> <p>14 normal range. 15:27:55</p> <p>15 Q. Bilirubin? 15:27:56</p> <p>16 A. And bilirubin is reported here as negative, so there 15:27:57</p> <p>17 is no quantitation of it. It's reported as negative. That's 15:28:08</p> <p>18 in the urine. 15:28:12</p> <p>19 Q. That's normal, right? 15:28:13</p> <p>20 A. Yeah. You don't have any bilirubin in the urine. 15:28:15</p> <p>21 Let's see, clinical chemistries, which I think -- 15:28:18</p> <p>22 Q. Here's more urine for you to look at. 15:28:23</p> <p>23 A. Okay. 15:28:45</p> <p>24 Q. Anything there? 15:28:45</p> <p>25 A. They're within the normal range. 15:28:46</p>	<p style="text-align: right;">Page 324</p> <p>1 biologic break while you look for that? 15:31:51</p> <p>2 MR. TUCKER: Sure. 15:31:55</p> <p>3 (A break was taken from 3:31 p.m. to 3:44 p.m.) 15:31:55</p> <p>4 THE WITNESS: Let's make sure we understand the 15:44:00</p> <p>5 parameters here to help you guys. It's clear to me, 15:44:02</p> <p>6 at least, that we're not going to finish this thing 15:44:05</p> <p>7 today in here, which means we're going to have to do 15:44:09</p> <p>8 another time. You're entitled -- your client has paid 15:44:13</p> <p>9 for another hour and change of my time, but that's not 15:44:15</p> <p>10 the issue. We're going to have to do an additional 15:44:20</p> <p>11 time. If we recognize that and we schedule it now, 15:44:25</p> <p>12 you guys could still make your original flights. 15:44:29</p> <p>13 MR. TUCKER: No, we won't. It's at 5:00. 15:44:33</p> <p>14 MR. WARD: You can make your original flight. 15:44:35</p> <p>15 This is Raleigh-Durham. I'm just trying to help you 15:44:38</p> <p>16 guys. 15:44:38</p> <p>17 MR. TUCKER: Thank you for your courtesy. 15:44:44</p> <p>18 MS. SMITH: Let's go until 5:00, and then we'll 15:44:46</p> <p>19 make a decision. 15:44:49</p> <p>20 BY MR. TUCKER: 15:44:55</p> <p>21 Q. What is the information that you are quoting from? 15:44:55</p> <p>22 You're not quoting from a record, but you're quoting from 15:44:59</p> <p>23 Dr. Harrison's letter/summary? 15:45:03</p> <p>24 MR. WARD: Hastings. 15:45:06</p> <p>25 15:45:06</p>

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OKLAHOMA CITY — 405-272-1006

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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

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1 BY MR. TUCKER: 15:16:13  
 2 Q. Right, Hastings? 15:16:13  
 3 A. There should be a blood analysis on the -- from the 15:45:10  
 4 12th. 15:45:18  
 5 Q. I'm going to hand you the Saint Francis records, one 15:45:19  
 6 of 18, Page 18 of 18, on Mr. Sumter and ask you if you can 15:45:22  
 7 find that thing that that fellow -- what's his name, Hastings, 15:45:27  
 8 is referring to. 15:45:31  
 9 A. Yes, sir. 15:47:08  
 10 Q. What do you find? 15:47:09  
 11 A. I find on Page 15 of 18 "Quantitative hemoglobin," 15:47:10  
 12 plasma hemoglobin, and this is at 9:07 on the 12th, "22.8," 15:47:15  
 13 This is as Dr. Hastings reported. 15:47:21  
 14 Q. 22.8 against your scale of 110, right? 15:47:24  
 15 A. 22.8 against the normal reference range of zero to 15:47:28  
 16 10.4. 15:47:34  
 17 Q. And your scale of interest of 110? 15:47:34  
 18 A. No, sir. We can go round and round -- 15:47:37  
 19 Q. Whatever phrase you've used. I'm not trying to put 15:47:40  
 20 words in your mouth. 15:47:44  
 21 MR. WARD: Yeah, you are. 15:47:45  
 22 BY MR. TUCKER: 15:16:13  
 23 Q. You said what you said, but the number you gave 15:16:13  
 24 is -- 15:47:48  
 25 A. This is twice the top of the normal range. 15:47:49

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1 The July 12th data, I want you to look at the 15:49:21  
 2 hemoglobin, the haptoglobin. The bound hemoglobin and the 15:49:24  
 3 haptoglobin, are those all normal? 15:49:33  
 4 A. Hemoglobin in normal range; hematocrit is in normal 15:49:35  
 5 range; albumin, which we would expect, is just -- is in normal 15:49:41  
 6 range. Actually, it's a little low. 15:49:51  
 7 Q. As opposed to a little high which you would be 15:49:55  
 8 concerned about? 15:49:59  
 9 A. Yes, sir. Most of us would kill for low. I mean, 15:50:00  
 10 this is the low blood find. Wouldn't kill for it, but -- 15:50:01  
 11 Q. But would like to have it? 15:50:07  
 12 A. Yes. And haptoglobin is in the normal range, yes, 15:50:08  
 13 sir. 15:50:12  
 14 Q. Except for that one indication, which is 111 on July 15:50:12  
 15 the 11th, and 22 on July 12th, there is no other laboratory 15:50:18  
 16 value that's abnormal with regard to Mr. Sumter; is that 15:50:24  
 17 right? 15:50:28  
 18 A. No, sir. There's also the matter of the elevated, 15:50:28  
 19 essentially, urine bilirubin, urobilin. 15:50:38  
 20 Q. What date was that? 15:50:42  
 21 A. What we find is -- in fact, we should go back and 15:50:44  
 22 look at both the urine and bilirubin for both of those. 15:50:53  
 23 Q. Would you take that back from the lawyer, please? 15:50:59  
 24 A. Yes, I will, as soon as he's finished looking at it. 15:51:02  
 25 THE WITNESS: Thank you, sir. 15:51:11

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1 Q. And 20 percent was the number you gave me at the 15:47:52  
 2 bottom end of your range of concern; is that right? 15:47:55  
 3 A. No, sir. 15:47:58  
 4 Q. Is it 20 percent of 110? 15:47:59  
 5 A. It is 20 percent of 100. That would be true. 15:48:04  
 6 Q. So it's less than 20 percent of 110? 15:48:10  
 7 A. Yes, sir. 15:48:13  
 8 Q. And you previously told me that a number of concern 15:48:13  
 9 for you, whatever you want to call it -- we can go back and 15:48:16  
 10 look at it -- but whatever you called it, we know you picked a 15:48:20  
 11 threshold number. 15:48:22  
 12 A. I said a number that -- you asked me to pick a 15:48:24  
 13 number you would be definitely concerned with, and I offered 15:48:27  
 14 that number, now regretting to say it. 15:48:30  
 15 Q. Which is 10.5 plus 100, right? 15:48:37  
 16 A. Yeah, plus 100.1. 15:48:41  
 17 Q. So this man was 22 on the 12th of July and -- 15:48:44  
 18 A. It goes from ten times the top of the normal range 15:48:50  
 19 to two times at the second time of the draw. So, again, it 15:48:54  
 20 would be mischaracterizing to say there's only this one point. 15:49:00  
 21 Q. After July 2nd -- 15:49:05  
 22 MR. WARD: July 2nd? 15:49:08  
 23 BY MR. TUCKER: 15:16:13  
 24 Q. July 12th, are there any -- first of all, before you 15:16:13  
 25 get rid of that July 12th data, would you look at that again. 15:49:14

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1 A. The first 13 pages are nothing but orders. So your 15:51:23  
 2 bilirubins are normal, and you did have essentially bilirubin 15:52:49  
 3 or urobilin in the urine, but that's it. They're not 15:53:00  
 4 enormously elevated. So he cites that they are present. 15:53:06  
 5 BY MR. TUCKER: 15:53:10  
 6 Q. But they're not significant? 15:53:10  
 7 A. Generally detecting it is something you don't do, 15:53:12  
 8 but they're not really particularly elevated. Finding them 15:53:16  
 9 is, to some people, the whole significance. 15:53:22  
 10 Q. And I think I asked you but I may have forgot to do 15:53:30  
 11 so: Did this gentleman present with any of the classic triad? 15:53:41  
 12 A. No, sir, not at the time he was in the hospital. 15:53:45  
 13 Q. Is that when you're supposed to present with the 15:53:48  
 14 classic triad, during the first 24, 48 hours of the event? 15:53:52  
 15 A. We would expect that you would see it. I mean, 15:53:55  
 16 seeing those is taken to be the sure sign. 15:54:00  
 17 Q. Are you aware of any case report or any literature 15:54:04  
 18 where arsine poisoning or injury from arsine was found when 15:54:15  
 19 the patient had a plasma free hemoglobin below 200 milligrams 15:54:22  
 20 per deciliter and had no change in haptoglobin and no change 15:54:26  
 21 in hemoglobin? 15:54:31  
 22 A. Could you restate the question? 15:54:32  
 23 MR. TUCKER: Could you reread the question, 15:55:02  
 24 please? 15:55:04  
 25 THE COURT REPORTER: "Are you aware of any case 15:54:08

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<p style="text-align: right;">Page 329</p> <p>1 report or any literature where arsine poisoning or 15:54:10</p> <p>2 injury from arsine was found when the patient had a 15:54:20</p> <p>3 plasma free hemoglobin below 200 milligrams per 15:54:23</p> <p>4 deciliter and had no change in haptoglobin and no 15:54:27</p> <p>5 change in hemoglobin? " 15:54:31</p> <p>6 A. Yes, sir. You're asking for a case report. But the 15:55:07</p> <p>7 literature does report that you don't necessarily see these 15:55:10</p> <p>8 bloods and see arsine poisoning in a case of chronic arsine 15:55:15</p> <p>9 poisoning. Again, acute arsine poisoning you would expect to 15:55:20</p> <p>10 see elevations in these; in this case, the sampling happens to 15:55:28</p> <p>11 have caught elevations in the plasma hemoglobin and not 15:55:34</p> <p>12 anything else? 15:55:39</p> <p>13 BY MR. TUCKER: 15:55:07</p> <p>14 Q. And there were no abnormalities in haptoglobin or 15:55:07</p> <p>15 hemoglobin; is that right? 15:55:44</p> <p>16 A. Yes, sir, that is correct. 15:55:45</p> <p>17 Q. We talked about the chronic business, and that's 15:55:46</p> <p>18 when he had the discussion earlier today about anemia; isn't 15:55:51</p> <p>19 that right? 15:55:56</p> <p>20 A. We did talk about chronic earlier, yes, sir. 15:55:56</p> <p>21 Q. And that was around about when we were also 15:56:01</p> <p>22 discussing anemia that was related to chronic exposure; isn't 15:56:04</p> <p>23 that correct? 15:56:08</p> <p>24 A. Yes, sir. 15:56:09</p> <p>25 Q. Okay. So you can conclude that Mr. Sumter was 15:56:09</p>	<p style="text-align: right;">Page 331</p> <p>1 BY MR. TUCKER: 15:57:30</p> <p>2 Q. So with respect to Mr. Sumter, what you're saying is 15:57:30</p> <p>3 that this arsine may have had a health effect? 15:57:34</p> <p>4 A. Yes, sir. In Mr. Sumter's case, we have the most 15:57:39</p> <p>5 objective information that supports, in fact, an effect that 15:57:45</p> <p>6 wasn't there before that was there after that is well 15:57:49</p> <p>7 described in the literature as being associated arsine 15:57:55</p> <p>8 exposure. 15:57:57</p> <p>9 Q. What other things can cause peripheral neuropathy? 15:57:58</p> <p>10 A. Oh, this is a toxicologist's dream. Organophosphate 15:58:05</p> <p>11 exposure; exposure to, again, phosphates or anything from 15:58:11</p> <p>12 pesticides to war gases. You can get some peripheral 15:58:16</p> <p>13 neuropathy most commonly -- you see optic but you also see 15:58:24</p> <p>14 peripheral neuropathy with methanol. You see it with many of 15:58:30</p> <p>15 the cytotoxic oncology agents. 15:58:34</p> <p>16 Q. Where is peripheral neuropathy? 15:58:37</p> <p>17 A. Peripheral -- 15:58:41</p> <p>18 Q. Where is his? 15:58:44</p> <p>19 A. If we read this -- and would you like to go to the 15:58:45</p> <p>20 record? 15:58:49</p> <p>21 Q. You're looking at the record or Dr. Hastings' 15:58:50</p> <p>22 letter? 15:58:54</p> <p>23 MR. WARD: And, yes, it is part of the record. 15:58:55</p> <p>24 MR. TUCKER: Thank you. 15:58:59</p> <p>25 A. I am looking, in this case, at Dr. Hastings' summary 15:59:00</p>
<p style="text-align: right;">Page 330</p> <p>1 exposed to a significant amount of arsine, which I'll take the 15:56:12</p> <p>2 liberty of translating to the phrase you used yesterday, 15:56:17</p> <p>3 "exposed to an amount of arsine that may have had a health 15:56:21</p> <p>4 effect at the time of the accident." 15:56:25</p> <p>5 A. Yes, sir. 15:56:26</p> <p>6 Q. What health effects did he have at the time of the 15:56:27</p> <p>7 accident? 15:56:32</p> <p>8 A. Subsequent to this -- and I have no information that 15:56:33</p> <p>9 existed before, and he's examined and tested for neuropathy -- 15:56:36</p> <p>10 Mr. Sumter is found, in fact, to have a peripheral neuropathy. 15:56:45</p> <p>11 Q. When you say "may have had a health effect," that's 15:56:52</p> <p>12 not the same thing as saying he did have a health effect, is 15:56:55</p> <p>13 it? 15:56:59</p> <p>14 A. No, sir, may have had a health effect and did have a 15:56:59</p> <p>15 health effect are not the same. 15:57:03</p> <p>16 Q. Yesterday you defined for me a significant amount of 15:57:05</p> <p>17 arsine as intended in your report was an amount of arsine that 15:57:08</p> <p>18 may have had a health effect; is that correct? 15:57:12</p> <p>19 THE WITNESS: Would you read that over again, 15:57:15</p> <p>20 please. 15:57:27</p> <p>21 THE COURT REPORTER: "Yesterday you defined for me 15:57:28</p> <p>22 a significant amount of arsine as intended in your 15:57:07</p> <p>23 report was an amount of arsine that may have had a 15:57:10</p> <p>24 health effect; is that correct?" 15:57:13</p> <p>25 A. Yes, sir. 15:57:30</p>	<p style="text-align: right;">Page 332</p> <p>1 or transcription of the record. We've already checked the two 15:59:07</p> <p>2 places against the data. As I said, when I checked it, it 15:59:12</p> <p>3 reflects accurately. We're not going to look at Dr. Hastings' 15:59:16</p> <p>4 conclusion. Okay? 15:59:20</p> <p>5 BY MR. TUCKER: 15:57:30</p> <p>6 Q. Yep. 15:57:30</p> <p>7 A. "Reexamination by Dr. Fortner on 31 July 2001 did 15:59:22</p> <p>8 confirm the patient still having intermittent sweats with some 15:59:44</p> <p>9 equilibrium abnormalities and does indicate the patient tires 15:59:44</p> <p>10 more easily than used to but does indicate there was some 15:59:47</p> <p>11 sensation of improved strength since his last visit. He was 15:59:51</p> <p>12 not experiencing significant headaches at the time of that 15:59:55</p> <p>13 examination. Dr. Fortner did confirm a positive Romberg 15:59:57</p> <p>14 examination consistent with either possible cerebellar 16:00:00</p> <p>15 abnormalities or peripheral abnormalities or peripheral" -- 16:00:06</p> <p>16 Q. I'm sorry. Cerebellar what? 16:00:07</p> <p>17 A. Labyrinthine. 16:00:09</p> <p>18 Q. What does that mean? 16:00:11</p> <p>19 A. CNS, okay, as opposed to peripheral. 16:00:13</p> <p>20 MR. WARD: Would you say that again? What's it 16:00:18</p> <p>21 mean? 16:00:21</p> <p>22 BY MR. TUCKER: 15:57:30</p> <p>23 Q. CNS? 15:57:30</p> <p>24 A. Central nervous system -- "or peripheral lower 16:00:23</p> <p>25 extremity distal neuropathy." So it's going to be his legs. 16:00:29</p>

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1 And, in fact, distal means it's starting around about the 16:00:33  
 2 feet, distal neuropathy. 16:00:36  
 3 Q. Both legs or one leg? 16:00:45  
 4 A. Well, you can't tell from this summary, but it would 16:00:47  
 5 be both legs. It would be bilateral. 16:00:56  
 6 Q. That was what date? 16:01:04  
 7 A. This is on 31 July. And subsequent to that -- 16:01:06  
 8 Q. 31 July of 2000 -- 16:01:15  
 9 A. 2001. 16:01:18  
 10 Q. So 31 July of 2001, he already has peripheral 16:01:19  
 11 neuropathy developing in both legs? 16:01:24  
 12 A. Signs of it, yes, sir. 16:01:27  
 13 Q. Even if it was caused by arsine, wouldn't that be 16:01:28  
 14 kind of quick? 16:01:31  
 15 A. That would typically be -- well, it depends, OP you 16:01:33  
 16 certainly get that that quickly, organophosphate. 16:01:38  
 17 Q. But we're not talking about organophosphates here. 16:01:46  
 18 A. Well, you're talking about time frames. Unlike 16:01:50  
 19 carcinogenics, neuropathy can be that rapid, yes, sir. 16:01:55  
 20 Q. Let's narrow it down in terms of a response to a big 16:01:58  
 21 old dose of arsine. 16:02:03  
 22 MR. WARD: Object to form. 16:02:05  
 23 BY MR. TUCKER: 15:57:30  
 24 Q. Isn't that pretty quick? 15:57:30  
 25 A. Or a dose when you already have some degree below. 16:02:09

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1 That is in the space of three weeks? 16:02:13  
 2 Q. Two to three weeks. 16:02:16  
 3 A. Twenty days versus 21. It's three weeks. 16:02:17  
 4 Q. Isn't that pretty quick? 16:02:21  
 5 A. If it's acute, it's in the range of plausibility, 16:02:23  
 6 yes. 16:02:34  
 7 Q. For somebody that had absolutely normal tests except 16:02:34  
 8 for one day, in which he had a plasma free hemoglobin of 111 16:02:39  
 9 with fat blood and another day when he had a plasma free 16:02:44  
 10 hemoglobin the next day of 21 and his haptoglobin and his 16:02:48  
 11 bound hemoglobin were all perfectly normal and he didn't have 16:02:53  
 12 any of the classic triad, wouldn't three weeks be pretty darn 16:02:56  
 13 quick to develop peripheral neuropathy from an exposure to 16:03:02  
 14 arsine? 16:03:07  
 15 MR. WARD: Object to the form. 16:03:07  
 16 A. Three weeks would be early in the range, but is in 16:03:08  
 17 the range of plausibility. If I could continue, please. 16:03:09  
 18 BY MR. TUCKER: 15:57:30  
 19 Q. Sure. 15:57:30  
 20 A. "He did recommend referral consultation to a 16:03:14  
 21 toxicologist to discuss the possibilities" -- these are the 16:03:18  
 22 kinds of people who look at the websites and call me, thank 16:03:22  
 23 you, because I'm not a treating physician in this case. 16:03:25  
 24 "The patient was seen by Dr. Terry Grewe on December 16:03:28  
 25 6, 2001. Dr. Grewe's examination of this patient confirmed 16:03:32

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1 his chemical exposure (arsine gas) and the patient's current 16:03:35  
 2 complaints of fatigue, blurred vision and chest pain with 16:03:41  
 3 memory loss. Dr. Grewe did recommend a neurology consultative 16:03:44  
 4 evaluation for the patient. 16:03:48  
 5 "In addition to Dr. Fortner's examination and 16:03:49  
 6 treatment of this patient post-hospitalization, the patient 16:03:52  
 7 was examined by Dr. Jeanne Edwards for a 16:03:56  
 8 neurological evaluation." 16:04:00  
 9 Q. Before you get to Dr. Edwards, do you know who 16:04:00  
 10 Dr. Grewe is? 16:04:03  
 11 A. I don't recollect at the moment, no, sir. 16:04:04  
 12 Q. Do you know if he was a doctor to whom this man was 16:04:08  
 13 sent by plaintiff's attorneys? 16:04:11  
 14 MR. WARD: He was sent to our independent medical 16:04:13  
 15 exercise. 16:04:16  
 16 A. No, sir, I do not. 16:04:17  
 17 BY MR. TUCKER: 15:57:30  
 18 Q. Sent to them by the first doctor hired by the 15:57:30  
 19 plaintiffs to exam this man? 16:04:22  
 20 A. I don't know. It's not in my knowledge. 16:04:25  
 21 Q. I'm sorry, the third doctor hired to examine this 16:04:27  
 22 man by the plaintiffs. 16:04:31  
 23 A. This is Dr. Edwards, the neurologist: "Dr. Edwards' 16:04:54  
 24 examination of February 4, 2002, does indicate her 16:04:58  
 25 neurological assessment was for the evaluation of a 16:05:01

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1 disequilibrium, blurred vision, lethargy, dizziness, memory 16:05:04  
 2 loss" -- 16:05:06  
 3 Q. What date was that? 16:05:07  
 4 A. February 4, 2002. "Dr. Edwards does indicate the 16:05:08  
 5 symptoms started in July of 2001 following an arsine gas 16:05:13  
 6 exposure." That's just saying that one occurred before the 16:05:17  
 7 other. "She does report that this patient had no previous 16:05:20  
 8 symptoms like the ones that he was currently experiencing and 16:05:24  
 9 that prior to his exposure he had been quite healthy. 16:05:27  
 10 "Following this evaluation, Dr. Edwards indicated 16:05:30  
 11 that this previously healthy patient had following a toxic 16:05:33  
 12 arsine gas exposure" -- again, just indicating one preceded 16:05:36  
 13 the other -- "developed symptoms of memory loss, balance and 16:05:41  
 14 coordination problems and general fatigue. 16:05:44  
 15 "She did recommend additional diagnostic studies. 16:05:47  
 16 The patient was seen by Dr. Greg Connor who did evaluate the 16:05:51  
 17 patient for balance problems." 16:05:53  
 18 Q. Before we get to Dr. Greg (sic), did you note that 16:05:57  
 19 Dr. Edwards noted other possible causes of this possible motor 16:06:00  
 20 neuropathy as being a previous knee injury, shoulder injury 16:06:03  
 21 and back injury? 16:06:07  
 22 A. I don't recollect as I sit here. 16:06:08  
 23 Q. Did Dr. Hastings see fit to include that in his 16:06:11  
 24 report? 16:06:15  
 25 A. No, sir. Dr. Hastings did not -- Dr. Hastings also, 16:06:15

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<p style="text-align: right;">Page 337</p> <p>1 however -- and this is why I made the differentiation reports. 16:06:20</p> <p>2 Yes the exposure precluded that, but in here it doesn't say it 16:06:23</p> <p>3 was causative. 16:06:28</p> <p>4 "EMG testing" -- this is Dr. Connor -- "EMG testing 16:06:33</p> <p>5 of the lower extremities was carried out revealing evidence of 16:06:38</p> <p>6 EMG and nerve conduction studies of both lower extremities 16:06:42</p> <p>7 showing slowing of the peroneal nerve on the left and an 16:06:47</p> <p>8 absence of the peroneal nerve activity on the right." 16:06:51</p> <p>9 So you do have -- in this case, you do have EMG or 16:06:53</p> <p>10 myograph data. "Dr. Connor did conclude that a distal motor 16:06:59</p> <p>11 neuropathy was present by EMG standards. He did indicate that 16:07:06</p> <p>12 the presence of a sural response goes against a significant 16:07:11</p> <p>13 sensory neuropathy" versus a -- 16:07:18</p> <p>14 Q. This is which kind? 16:07:23</p> <p>15 A. Sensory. Peripheral neuropathies come in several 16:07:23</p> <p>16 forms. 16:07:28</p> <p>17 Q. This is sensory neuropathy? 16:07:28</p> <p>18 A. No. This is motor neuropathy. 16:07:29</p> <p>19 Q. Let me ask you a question at that point: Do you 16:07:32</p> <p>20 know of any literature that supports the kind of neuropathy 16:07:35</p> <p>21 that you get as a consequence of having been exposed to arsine 16:07:39</p> <p>22 as being motor neuropathy rather than sensory? 16:07:43</p> <p>23 A. You typically get both. 16:07:47</p> <p>24 Q. Can you tell me where in the literature it says 16:07:49</p> <p>25 that? Write that down. Put it with the others. You wrote 16:07:54</p>	<p style="text-align: right;">Page 339</p> <p>1 Q. Well, "acute" means when, over what time frame? 16:10:52</p> <p>2 A. Yes, sir. 16:10:54</p> <p>3 Q. "Severe" means of consequence, doesn't it? 16:10:55</p> <p>4 A. Really, yes. 16:10:59</p> <p>5 MR. WARD: Is that what severe means, arsine of 16:11:01</p> <p>6 consequence? 16:11:05</p> <p>7 A. Well, that you have more marked problems. We 16:11:05</p> <p>8 differentiate those things that may be transitory. You get an 16:11:09</p> <p>9 exposure, something happens, it goes away, as opposed to those 16:11:16</p> <p>10 things that persist. 16:11:20</p> <p>11 BY MR. TUCKER: 15:57:30</p> <p>12 Q. Look at Mr. Sumter, for example. We have a plasma 15:57:30</p> <p>13 free hemoglobin report of 111 on July 11th, 2001; July 12th 16:11:25</p> <p>14 it's down to 22; there is no later evidence of any elevated 16:11:33</p> <p>15 plasma hemoglobin at all. Isn't that a transitory event? 16:11:39</p> <p>16 A. Well, the literature is quite clear. The 16:11:43</p> <p>17 hematologic -- the whole blood base thing will be transitory. 16:11:46</p> <p>18 Q. And at 111, when the literature we've looked at so 16:11:49</p> <p>19 far says that it's not uncommon to find 2000 milligrams per 16:11:57</p> <p>20 deciliter, I mean, would you say that 111 constitutes evidence 16:12:04</p> <p>21 of a severe exposure? 16:12:10</p> <p>22 MR. WARD: By "severe" you're, again, defining 16:12:12</p> <p>23 that of a consequence? 16:12:15</p> <p>24 MR. TUCKER: I'm just defining however he chooses 16:12:17</p> <p>25 to define it. 16:12:20</p>
<p style="text-align: right;">Page 338</p> <p>1 that down, right? 16:09:08</p> <p>2 A. Yes, sir, I did. And you have to make sure I write 16:09:09</p> <p>3 them down. 16:09:12</p> <p>4 Q. Is the EMG you're talking about in February of '02, 16:09:14</p> <p>5 is that the same neuropathy the man's complaining of three 16:09:19</p> <p>6 weeks after this incident on July 31 of 2001? 16:09:23</p> <p>7 A. Yes, sir, one would expect it would be. 16:09:27</p> <p>8 Q. And while you're looking for literature, would you 16:09:29</p> <p>9 look for some literature that says you can get that neuropathy 16:09:34</p> <p>10 within three weeks of an exposure where you have no decrease 16:09:38</p> <p>11 in hemoglobin and no decrease in haptoglobin and none of the 16:09:43</p> <p>12 classic triad? 16:09:51</p> <p>13 A. I'm not aware -- well, we'll look. 16:09:52</p> <p>14 Q. I want to see if you can find me something that you 16:09:56</p> <p>15 get that in the event of exposure that doesn't cause any more 16:09:59</p> <p>16 evidence other than 111 milligrams per deciliter of plasma 16:10:04</p> <p>17 free hemoglobin. In fact, don't look that up. Let me ask you 16:10:09</p> <p>18 a different question. I'm afraid if I over-task you, you're 16:10:24</p> <p>19 not going to get to it. 16:10:24</p> <p>20 Would you agree that neuropathy has a reaction to 16:10:30</p> <p>21 only a severe exposure? 16:10:32</p> <p>22 A. No, sir, not necessarily. The literature is fairly 16:10:35</p> <p>23 clear on that. You can get neuropathy with enough chronic 16:10:41</p> <p>24 exposure. You said "severe," and I was answering acute. So 16:10:46</p> <p>25 we may be talking in slightly different terms. 16:10:51</p>	<p style="text-align: right;">Page 340</p> <p>1 MR. WARD: Well, I object to the form, you 16:12:21</p> <p>2 referred to severe exposure as a consequence earlier, 16:12:23</p> <p>3 so I prefer to continue with that definition. 16:12:26</p> <p>4 MR. TUCKER: I prefer he use his definition. 16:12:29</p> <p>5 A. Could you re-ask the question, please, sir? 16:12:32</p> <p>6 BY MR. TUCKER: 15:57:30</p> <p>7 Q. Sure. In light of the fact that the literature that 15:57:30</p> <p>8 we've seen, the only literature we've seen today, talks in 16:12:39</p> <p>9 terms of a not uncommon or a not unusual or have a plasma free 16:12:43</p> <p>10 hemoglobin reports of 2000 milligrams per deciliter, if 16:12:50</p> <p>11 Mr. Sumter didn't have fat blood at all, just had good ole 16:12:57</p> <p>12 blood and his number was 111 plasma free hemoglobin, then 16:13:03</p> <p>13 would you call that a severe number? 16:13:10</p> <p>14 A. Severe in -- I go back to severe is a health 16:13:13</p> <p>15 consequence. 16:13:20</p> <p>16 Q. Well, any health consequence is a health 16:13:20</p> <p>17 consequence. 16:13:23</p> <p>18 A. Well, no, sir. Is a transitory cough a -- 16:13:23</p> <p>19 Q. Let's stick to arsine, plasma free hemoglobin. 16:13:29</p> <p>20 A. Well, it could be arsine too. Is a transitory cough 16:13:33</p> <p>21 a severe health consequence? No. Is a peripheral neuropathy? 16:13:37</p> <p>22 Absolutely. 16:13:42</p> <p>23 Q. But I think you're losing site of my question. Is a 16:13:43</p> <p>24 111 plasma free hemoglobin number in a person that does not 16:13:49</p> <p>25 have lipemic blood, has nonfat blood, even if that person is 16:13:54</p>

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<p>1 111, considered to be evidence of a severe exposure to arsine? 16:14:01</p> <p>2 A. 111 is ten times the top of the normal range. 16:14:05</p> <p>3 Q. That's not my question. 16:14:08</p> <p>4 MR. WARD: Object. 16:14:11</p> <p>5 A. I thought it was responsive to your question. 16:14:12</p> <p>6 BY MR. TUCKER: 15:57:30</p> <p>7 Q. Listen to it again and see if you can answer it yes 15:57:30</p> <p>8 or no. 16:14:19</p> <p>9 THE COURT REPORTER: "Is a 111 plasma free 16:13:48</p> <p>10 hemoglobin number in a person that does not have 16:13:51</p> <p>11 lipemic blood, has nonfat blood, even if that person 16:13:54</p> <p>12 is 111 considered to be evidence of a severe exposure 16:14:00</p> <p>13 to arsine?" 16:14:04</p> <p>14 MR. WARD: I'm going to make my objection since 16:14:47</p> <p>15 the term "severe" is not defined and remind the 16:14:50</p> <p>16 witness that Mr. Tucker previously defined it as of a 16:14:54</p> <p>17 health consequence. 16:14:59</p> <p>18 MR. TUCKER: I didn't define it that way. 16:14:59</p> <p>19 MR. WARD: That's what you said. It's on the 16:15:02</p> <p>20 record. It's your meaning of health consequence. 16:15:03</p> <p>21 MR. TUCKER: Well, I'm not a dictionary. 16:15:06</p> <p>22 A. It may be, yes, sir. 16:15:11</p> <p>23 BY MR. TUCKER: 16:15:13</p> <p>24 Q. Does the literature discuss what's severe? 16:15:13</p> <p>25 A. The literature -- of severe health consequences, 16:15:17</p>	<p>1 A. I didn't look at it to evaluate his report, one or 16:16:27</p> <p>2 the other, no, sir. I have not been asked to do that, to 16:16:30</p> <p>3 address Dr. Banner's report. 16:16:34</p> <p>4 Q. So you can't tell me -- today as you sit there, you 16:16:35</p> <p>5 can't tell me that you disagree with his report; is that 16:16:40</p> <p>6 correct? 16:16:44</p> <p>7 A. That's correct, I can't tell you that I disagree or 16:16:44</p> <p>8 agree, sir. 16:16:48</p> <p>9 MR. TUCKER: I would like to take a very short 16:16:49</p> <p>10 break. 16:16:52</p> <p>11 (A break was taken from 4:17 p.m. to 4:24 p.m.) 16:16:52</p> <p>12 BY MR. TUCKER: 16:23:59</p> <p>13 Q. Guerra, please. Just look at your report on 16:23:59</p> <p>14 Mr. Obdulio Guerra. 16:24:18</p> <p>15 A. Last name again. 16:24:30</p> <p>16 Q. G-U-E-R-R-A, Guerra. To refresh your recollection, 16:24:32</p> <p>17 will you please look at your report with regard to that 16:25:02</p> <p>18 gentleman? 16:25:05</p> <p>19 A. Yes, sir. 16:25:06</p> <p>20 Q. Your opinion was "I cannot therefore render an 16:25:07</p> <p>21 opinion as to any of his currently self-reported medical 16:25:15</p> <p>22 issues being related to arsine exposure at the time of the 16:25:18</p> <p>23 incident?" 16:25:20</p> <p>24 A. Yes, sir. 16:25:21</p> <p>25 Q. Does that remain your opinion today? 16:25:22</p>
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<p>1 yes, sir. 16:15:22</p> <p>2 Q. Does the literature discuss what would be considered 16:15:23</p> <p>3 a significant exposure to arsine? 16:15:25</p> <p>4 A. Yes, sir, in terms of exposure levels. 16:15:27</p> <p>5 Q. Did you read Dr. Banner's report? 16:15:32</p> <p>6 A. I did read Dr. Banner's report. 16:15:38</p> <p>7 Q. Do you know who he is? 16:15:41</p> <p>8 A. He was the -- well, Dr. Banner was the person that 16:15:42</p> <p>9 was actually in charge of the immediate response. 16:15:47</p> <p>10 Q. Do you know he's also the chief of medical 16:15:51</p> <p>11 toxicology at Saint Francis? 16:15:54</p> <p>12 A. Yes. 16:15:56</p> <p>13 Q. Do you know he's the director of the poison control 16:15:56</p> <p>14 -- he's chief of poison control for the State of Oklahoma? 16:16:00</p> <p>15 A. Yes, sir. 16:16:01</p> <p>16 Q. Did you know he was the person that quarterbacked 16:16:01</p> <p>17 the triage of all of these folks that came in from the Port of 16:16:06</p> <p>18 Catoosa? 16:16:14</p> <p>19 A. Yes, sir. 16:16:14</p> <p>20 MR. WARD: At St. John's? You're not suggesting 16:16:14</p> <p>21 he quarterbacked the other hospitals, are you? 16:16:18</p> <p>22 BY MR. TUCKER: 16:16:21</p> <p>23 Q. You didn't rebut his report? 16:16:21</p> <p>24 A. I did not. 16:16:24</p> <p>25 Q. Do you disagree with it? 16:16:25</p>	<p>1 A. Yes, sir. 16:25:24</p> <p>2 THE WITNESS: Excuse me, I'll be right back. 16:26:12</p> <p>3 (Off the record from 4:26 p.m. to 4:29 p.m.) 16:26:12</p> <p>4 BY MR. TUCKER: 16:28:37</p> <p>5 Q. Please look at what's marked as Exhibit 73. Write 16:28:37</p> <p>6 73 on there if you want to. What is that, sir? 16:28:45</p> <p>7 A. This is a document taken from the Center for Disease 16:28:56</p> <p>8 Control website. 16:29:03</p> <p>9 Q. Have you seen that before? 16:29:04</p> <p>10 A. Yes, sir. 16:29:05</p> <p>11 Q. Have you used it before? 16:29:05</p> <p>12 A. Yes, sir. It's one of the things I looked at and 16:29:07</p> <p>13 considered. 16:29:12</p> <p>14 Q. And, in fact, when you did your report, didn't you 16:29:13</p> <p>15 cut and paste part of your report out of this CDC? 16:29:22</p> <p>16 A. Part of it. I paraphrased portions of the CDC and 16:29:26</p> <p>17 it also occurs on another page, by the way. They've 16:29:31</p> <p>18 paraphrased other people. 16:29:36</p> <p>19 Q. I'm not saying that's a bad thing to do. I'm just 16:29:37</p> <p>20 saying; isn't that what you did, you used the same layout? 16:29:41</p> <p>21 Here's your report, here's the CDC. 16:29:46</p> <p>22 A. And what I'm saying is that occurs in other places 16:29:50</p> <p>23 also as well. But, yeah, it's consistent with this, yes, sir. 16:29:54</p> <p>24 Q. When I look in your file I see you have this page 16:29:59</p> <p>25 from the CDC on the next page and you've used a yellow 16:30:02</p>

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<p>1 highlighter. 16:30:08</p> <p>2 A. Yes, sir. 16:30:09</p> <p>3 Q. You changed the dots to diamonds and didn't boldface 16:30:11</p> <p>4 and used a different type face, but other than that, it's the 16:30:15</p> <p>5 same, isn't it? 16:30:17</p> <p>6 A. I would have to check it. But, yes, sir, what would 16:30:18</p> <p>7 you like me to do with this? 16:30:24</p> <p>8 Q. Please look at Page 1 of that document, Page 1 of 16:30:26</p> <p>9 14. 16:30:40</p> <p>10 A. Unfortunately, my copies are — 16:30:41</p> <p>11 Q. (Indicating.) 16:30:46</p> <p>12 A. That's not the CDC. That's ATSDR. They're two 16:30:47</p> <p>13 different Web page printouts. 16:30:57</p> <p>14 Q. What is the Agency for Toxic Substances and Disease 16:30:59</p> <p>15 Register? 16:31:06</p> <p>16 A. It's a — CDC is all causes of health effects and 16:31:08</p> <p>17 diseases; ATSDR was set up subsequent to -- 16:31:12</p> <p>18 Q. Is it part of the CDC? 16:31:19</p> <p>19 A. No. It's also in Atlanta, but it's an independent 16:31:22</p> <p>20 agency. 16:31:28</p> <p>21 Q. It's a federal agency? 16:31:29</p> <p>22 A. Yes, sir. 16:31:30</p> <p>23 Q. Is it an authoritative source? 16:31:30</p> <p>24 A. Yes, sir. 16:31:33</p> <p>25 Q. The first page of the ATSDR paper on "Medical 16:31:34</p>	<p>1 level that you would have an irritation is way beyond. 16:33:16</p> <p>2 Q. So if someone comes in and says "I have a sore 16:33:19</p> <p>3 throat from breathing arsine," whatever they breathed, you 16:33:23</p> <p>4 know it wasn't arsine? 16:33:27</p> <p>5 A. Well, no. You know something else is likely to be 16:33:28</p> <p>6 there also. 16:33:28</p> <p>7 Q. Or instead? 16:33:28</p> <p>8 A. Or instead, yes, sir. 16:33:29</p> <p>9 Q. You don't have any idea whether arsine is there or 16:33:30</p> <p>10 not, but you know that arsine would not cause a sore throat? 16:33:34</p> <p>11 A. Based on that alone, yes, sir. 16:33:36</p> <p>12 Q. Some of these folks that were over at Air 16:33:39</p> <p>13 X-Changers, do you know what their jobs were? 16:33:44</p> <p>14 A. They ranged everywhere from reception to working on 16:33:46</p> <p>15 air-conditioner systems and the roof and so forth. 16:33:56</p> <p>16 Q. What do they make over there? What do they do? 16:33:59</p> <p>17 What's their business? 16:34:02</p> <p>18 A. Off the top of my head, I don't know. 16:34:03</p> <p>19 Q. Don't they do metal fabrications, lots of welding 16:34:05</p> <p>20 and cutting? 16:34:09</p> <p>21 A. Yes, sir, I do know that's part of some of the job 16:34:10</p> <p>22 descriptions. 16:34:14</p> <p>23 Q. Can the gases that come off from a welding operation 16:34:15</p> <p>24 cause irritation to your throat? 16:34:19</p> <p>25 A. Yes, sir. 16:34:20</p>
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<p>1 Management Guidelines for Arsine," parts of that are also in 16:31:43</p> <p>2 your file; isn't that correct? 16:31:49</p> <p>3 A. Yes, sir. In fact, the whole thing should be in the 16:31:50</p> <p>4 file. 16:31:54</p> <p>5 Q. Under "Descriptions," does it describe whether or 16:31:54</p> <p>6 not arsine is irritating? 16:32:01</p> <p>7 A. It says "Because arsine is not irritating and 16:32:03</p> <p>8 produces no immediate symptoms, persons exposed to hazardous 16:32:13</p> <p>9 levels may be unaware of its presence." 16:32:17</p> <p>10 Q. So it's nonirritating? 16:32:20</p> <p>11 A. Yes, sir. It describes it as nonirritating, yes, 16:32:22</p> <p>12 sir. 16:32:23</p> <p>13 Q. Is that supportive or contradictory to your belief 16:32:23</p> <p>14 that people that got raw throats when they breathed in 16:32:27</p> <p>15 something, got raw throats from breathing in arsine? 16:32:31</p> <p>16 A. Restate your question, please. 16:32:35</p> <p>17 Q. Is that statement from the Agency for Toxic 16:32:39</p> <p>18 Substances that arsine is nonirritating, supportive or 16:32:43</p> <p>19 nonsupportive of your earlier testimony that you believe that 16:32:47</p> <p>20 persons who reported that they had sore throats or raw throats 16:32:50</p> <p>21 immediately upon inhaling this gas was related to the fact 16:32:54</p> <p>22 that they were breathing arsine? 16:32:59</p> <p>23 A. Arsine could have been a component of it. But in 16:33:02</p> <p>24 itself, arsine — by "nonirritating," what they mean is, in 16:33:06</p> <p>25 fact, it's not a primary irritant. And, typically, in the 16:33:10</p>	<p>1 Q. Turn over to Page 3 of this group. It talks about 16:34:21</p> <p>2 the health effects of arsine. 16:34:27</p> <p>3 A. Yes, sir. 16:34:30</p> <p>4 Q. "Health effects," second sentence, "Its primary 16:34:31</p> <p>5 toxic effect is due to hemolysis resulting in renal failure." 16:34:35</p> <p>6 Do you agree with that? 16:34:41</p> <p>7 A. The second bullet? 16:34:42</p> <p>8 Q. No, the second sentence of the first bullet. "Its 16:34:44</p> <p>9 primary toxic effect is due to hemolysis resulting in renal 16:34:48</p> <p>10 failure." Do you agree with that? 16:34:52</p> <p>11 A. The second bullet "Initially, some patients may 16:34:54</p> <p>12 look" — 16:34:57</p> <p>13 Q. No. The second sentence of the first bullet, "Its 16:34:58</p> <p>14 primary toxic effect is due to hemolysis resulting in renal 16:35:03</p> <p>15 failure." Do you agree with that? 16:35:09</p> <p>16 A. That would be the one that — we've talked about 16:35:10</p> <p>17 that also. That would be your signal target organ. Yes, sir, 16:35:14</p> <p>18 I think we've concurred on that. 16:35:20</p> <p>19 Q. Looking at the second bullet, "The common initial 16:35:22</p> <p>20 symptoms of exposures include malaise, headache, thirst, 16:35:27</p> <p>21 shivering, abdominal pain and dyspnea." That's your classic 16:35:33</p> <p>22 triad, isn't it? 16:35:39</p> <p>23 A. It's included in there, yes, sir. 16:35:40</p> <p>24 Q. Plus thirst and shivering and malaise? 16:35:42</p> <p>25 A. Yes, sir. 16:35:47</p>

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<p>1 Q. "These symptoms usually occur within 30 to 60 16:35:47  2 minutes with heavy exposure, but can be delayed for 2 to 24 16:35:54  3 hours"; is that right? 16:35:58  4 A. Yes, sir. That's what it says. 16:35:59  5 Q. Did any of the 13 persons that you've reported on 16:35:59  6 report to have the classic Triad? 16:36:03  7 A. No, sir. 16:36:07  8 Q. Look at "Hematologic Health Effects." Look at the 16:36:08  9 second sentence, it's down at the bottom of the page. 16:36:25  10 "Haptoglobin levels decline rapidly"; is that right? 16:36:33  11 A. Yes, sir. 16:36:36  12 Q. Did we find any of the 13 plaintiffs that had 16:36:36  13 haptoglobin levels that had declined precipitously or declined 16:36:41  14 very much at all or declined at all? 16:36:47  15 A. At any time of the times measured, no, sir. 16:36:48  16 Q. Look at the next page, "Free hemoglobin levels and 16:36:51  17 plasma rise. Levels greater than 2 grams" — what is that 16:36:57  18 number, 2 grams per what? 16:37:03  19 A. Deciliter per 100 ml. 16:37:05  20 Q. That's 2000 milligrams per deciliter? 16:37:08  21 A. Yes, sir, that would be 2000 milligrams per 16:37:12  22 deciliter per 100 mls. 16:37:16  23 Q. Okay. Then looking down to "Renal" — would you 16:37:18  24 agree with that, by the way, what I just read to you? 16:37:27  25 A. That free plasma — free hemoglobin levels in plasma 16:37:31</p>	<p>1 says that 110 milligrams per deciliter constitutes high; is 16:38:49  2 that right, for purposes of arsine analysis? 16:39:00  3 A. No, sir, we haven't written that down yet. 16:39:03  4 Q. Okay. 16:39:07  5 A. Here it is, excuse me, "References supporting 0.1 to 16:39:11  6 0.2 per 100 mls being of concern." 16:39:15  7 Q. Gastrointestinal. First sentence, "An onset of 16:39:20  8 nausea, vomiting and crampy abdominal pain are among the first 16:39:25  9 signs" — that's in bold print; isn't it — "of arsine 16:39:30  10 poisoning"? "First signs" is in bold print. 16:39:33  11 A. Yes, sir. 16:39:37  12 Q. "Onset varies from a few minutes to 24 hours after 16:39:38  13 exposure." You agree with that, don't you? 16:39:42  14 A. Yes, sir. 16:39:47  15 Q. And except for Mr. Hinton who woke up nauseous and 16:39:47  16 vomiting in the morning before he ever went to work, we didn't 16:39:53  17 have anybody else that reported that; is that right? 16:39:55  18 MR. WARD: That's not true. I object to that. 16:39:57  19 A. I believe or my recollection — I would have to 16:40:07  20 refresh it — is, in fact — I don't remember anybody other 16:40:15  21 than Joshua Hinton reporting abdominal pain and cramping. I 16:40:19  22 do believe there are other cases of people reporting nausea. 16:40:25  23 I don't remember anybody else reporting vomiting. 16:40:29  24 BY MR. TUCKER: 16:40:31  25 Q. Okay. 16:40:31</p>
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<p>1 rise, yes, sir. 16:37:37  2 Q. And the parenthesis that follows in the same 16:37:38  3 sentence. Do you agree with that? 16:37:41  4 A. I would point out what they did — and you can look 16:37:43  5 at an earlier edition of Dart's, but this is straight out of 16:37:46  6 Dart which he picked up from an earlier paper. 16:37:47  7 Q. The answer is you don't disagree with it, do you? 16:37:51  8 A. Disagree with what? 16:37:54  9 Q. The statement, "Free hemoglobin levels and plasma 16:37:55  10 rise. Levels greater than 2 grams per deciliter" — 16:36:58  11 A. Yes, sir. 16:38:04  12 Q. Would you agree with that? 16:38:05  13 A. Yes, sir. 16:38:08  14 Q. Look down to "Renal." Look to the next-to-the-last 16:38:08  15 sentence there about urinalysis. 16:38:14  16 A. Yes, sir. 16:38:20  17 Q. "Urinalysis shows large amount of protein and free 16:38:20  18 hemoglobin usually without intact of RBC, red blood cells"? 16:38:25  19 A. Large amounts of protein usually without, yes, sir. 16:38:29  20 Q. Do you know what they mean? Do they define large 16:38:33  21 amount? 16:38:36  22 A. Better than twofold the top of the normal range. 16:38:36  23 Q. Do they define -- 16:38:42  24 A. They don't define it here. 16:38:45  25 Q. But you're going to find me that publication that 16:38:47</p>	<p>1 A. The second sentence in that "Onset varies from a few 16:40:38  2 minutes to 24 hours after exposure." 16:40:43  3 Q. Turn to Page 11, if you would. 16:40:45  4 A. Page numbers, by the way, on this copy are pretty 16:41:16  5 well cut off. 16:41:20  6 Q. I'm sorry. Arsine patient information sheet. 16:41:20  7 A. Yes, sir. I'm able to read the bottoms of them. 16:41:25  8 Q. "Are there any future health effects likely to 16:41:26  9 occur?" Do you see that section? 16:41:30  10 A. Yes, sir, I see the section. 16:41:31  11 Q. "After a serious exposure, symptoms usually begin 16:41:37  12 within 2 to 24 hours." Do you see the follow-up instructions. 16:41:40  13 "Most people do not develop long-term effects from a single 16:41:44  14 small exposure to arsine." Do you agree with that? 16:41:48  15 A. Yes, sir. 16:41:52  16 Q. Do they define what is a "small exposure"? 16:41:52  17 A. Not here, no, sir. 16:41:56  18 Q. So they say "large" in one place and "small" in 16:42:01  19 another but they don't define it in either place; is that 16:42:04  20 right? 16:42:09  21 A. Yes, sir, because of individual biologic 16:42:09  22 variability. 16:42:11  23 Q. Do we know why they didn't define "small" and 16:42:11  24 "large"? 16:42:14  25 A. Because of individual biologic variability. 16:42:14</p>

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1 Q. Does it say that in there someplace? 16:42:17  
 2 A. No, sir. 16:42:20  
 3 Q. Looking on at "Future Health Effects: In rare 16:42:21  
 4 cases, permanent kidney damage or nerve damage has developed 16:42:32  
 5 after a severe exposure." 16:42:36  
 6 A. Yes, sir. 16:42:38  
 7 Q. Do they define a "severe exposure"? 16:42:38  
 8 A. No, sir, not here. 16:42:42  
 9 Q. We're going to get out now Ms. Haggard. 16:42:43  
 10 A. Okay. I'm going to lay aside the ATSDR discussion 16:43:21  
 11 of acute effects. Teresa Haggard, yes, sir. 16:43:48  
 12 Q. Do you have Ms. Haggard's medical records, Dr. Gad? 16:44:08  
 13 A. I do. I have the printout in front of me, yes, sir. 16:44:34  
 14 Q. The lady's been to the doctor a lot in her life. 16:44:38  
 15 Did you say you did or didn't have them? 16:44:59  
 16 A. I'm sorry. I do have what I printed out. 16:45:01  
 17 Q. You say with regard to Ms. Haggard that you have 16:45:05  
 18 records of decontamination of treatment. 16:46:05  
 19 A. Excuse me. 16:46:14  
 20 Q. Do you have anything that confirms that she even 16:46:16  
 21 went to the hospital on the 11th of July? 16:46:19  
 22 A. Hold on a second. I'm still struggling with the 16:46:22  
 23 duration of the list of medical records, complete. "Saint 16:46:31  
 24 Francis Hospital, 11 July, arsine exposure and pregnancy." 16:47:27  
 25 Q. Does that say she went to Saint Francis at that 16:47:35

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1 A. In a person of pregnancy, no, sir. 16:50:24  
 2 Q. For example, I'm reading from Dr. Hastings' letter 16:50:26  
 3 dated February 20th in which he says "Laboratory testing at 16:50:32  
 4 the time of the hospitalization or trip to the hospital did 16:50:38  
 5 include certain diagnostic tests which did not reveal evidence 16:50:41  
 6 of significant anemia outside the normal levels expected at 16:50:47  
 7 pregnancy." Is that correct? 16:50:52  
 8 A. Where are you reading that, sir? 16:50:54  
 9 Q. I'm reading it from Dr. Hastings' letter? 16:50:59  
 10 A. Which page? 16:51:03  
 11 Q. Two — third from the last paragraph. 16:51:04  
 12 A. Yes. It reads "Laboratory testing did include 16:51:31  
 13 certain diagnostic tests which did not reveal evidence of 16:51:36  
 14 significant anemia outside of the normal levels expected at 16:51:41  
 15 pregnancy. Laboratory testing to include free plasma 16:51:45  
 16 hemoglobin or urinary arsenic levels were apparently not 16:51:49  
 17 drawn." 16:51:56  
 18 Q. You say in your report that she was decontaminated 16:51:56  
 19 and received treatment from the time of the accident. 16:52:01  
 20 It's getting close to the time when you said you 16:52:03  
 21 have to quit, so I'm going to short-circuit some of this. I'm 16:52:06  
 22 going to tell you what the records show without you having to 16:52:12  
 23 go through and hunt for it. 16:52:12  
 24 The records reflect that this lady went to WorkMed, 16:52:13  
 25 which is the clinic there at the Port of Catoosa, on the 16:52:16

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1 point? 16:47:38  
 2 A. Yes, sir, that's the date on here. 16:47:38  
 3 Q. Do your records reflect that she went to the doctor 16:47:40  
 4 on June 7th, 2001, as a part of her normal pregnancy 16:47:43  
 5 treatment? 16:47:52  
 6 A. I'm sorry. 16:47:52  
 7 Q. Do your records reflect anything showing the visit 16:47:53  
 8 to her obstetrician/gynecologist on June 7th, 2001? 16:47:56  
 9 A. June 7. I have a LabCorp which is a test. 16:48:02  
 10 Q. Blackstock, July 7th? 16:48:17  
 11 A. Blackstock. There is no date of service next to 16:48:24  
 12 Dr. Blackstock's. There's only a date of a bill. 16:48:39  
 13 Q. Is there a report of lab work of hemoglobin, 11.8, 16:48:39  
 14 with a low normal 11.5; hematocrit 34.2, with a low normal of 16:48:40  
 15 34; RBC 3.76, with a low normal of 3.8? 16:48:47  
 16 A. I don't have printed out the OB/GYN, that day. And 16:48:54  
 17 the listing by date of service doesn't identify it as being -- 16:49:52  
 18 Q. Well, if that data I just read to you is the 16:49:57  
 19 consequence of the lab work that was actually done on June the 16:50:00  
 20 7th, that was about a month before the event at Port of 16:50:04  
 21 Catoosa; is that right? 16:50:09  
 22 A. That would be a month before, yes, sir. 16:50:10  
 23 Q. And so if you have blood levels following July 11th 16:50:11  
 24 that were similar to that, that wouldn't be too surprising, 16:50:15  
 25 would it, in a pregnant lady? 16:50:18

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1 evening of the event. Okay? She was tested at WorkMed and at 16:52:19  
 2 WorkMed and then she went home. She was tested at WorkMed and 16:52:26  
 3 WorkMed said, "Your urine dipstick showed positive for blood, 16:52:31  
 4 so we think you ought to go to the hospital and get checked." 16:52:36  
 5 And then she went to the hospital and got checked. 16:52:40  
 6 Now, that's not being part of a decontamination 16:52:43  
 7 process, is it? 16:52:46  
 8 A. No, sir. 16:52:48  
 9 Q. When she got the hospital and got her urine tested 16:52:49  
 10 and evaluated, did they consider the -- did they do any 16:52:53  
 11 determination of any kind to determine whether there were red 16:53:02  
 12 blood cells in there, in that urine? 16:53:06  
 13 A. I don't know. I don't recollect if they did a 16:53:10  
 14 microscopic or not. 16:53:15  
 15 Q. Was there any finding of hemoglobinuria? 16:53:17  
 16 A. There were not laboratory findings indicative of -- 16:53:22  
 17 Q. Hemoglobinuria? 16:53:31  
 18 A. -- the tests that they did, yes, sir. 16:53:32  
 19 Q. Now, you say in your report that "She reports tastes 16:53:34  
 20 at the time of the accident consistent with arsine exposure." 16:53:43  
 21 A. Yes, sir. 16:54:07  
 22 Q. Now, I'm looking at Dr. Hastings' letter, and he has 16:54:07  
 23 a pretty thorough explanation of what she said. And you can 16:54:13  
 24 help me, but I don't see in his letter where he says anything 16:54:18  
 25 about her reporting any taste. 16:54:22

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<p>1 A. Hold on. 16:54:28</p> <p>2 MR. WARD: Is your question: Does it say it in 16:54:41</p> <p>3 Dr. Hastings' report? 16:54:44</p> <p>4 BY MR. TUCKER: 16:54:45</p> <p>5 Q. Let me short-circuit it for you. Turn to Page 4 of 16:54:45</p> <p>6 his letter. Look at the second sentence of the first 16:54:49</p> <p>7 paragraph of his medical opinion on Page 4. 16:54:55</p> <p>8 A. Page 4? 16:55:02</p> <p>9 Q. Yes. 16:55:03</p> <p>10 A. Which paragraph? 16:55:04</p> <p>11 Q. "Medical Opinion," first paragraph of "Medical 16:55:05</p> <p>12 Opinion," second sentence, read that out loud. 16:55:09</p> <p>13 A. "The patient indicates that he did not experience 16:55:13</p> <p>14 any abnormal smells or tastes at the time of this toxic arsine 16:55:18</p> <p>15 gas release." 16:55:24</p> <p>16 Q. So while we're looking at Dr. Hastings' gender 16:55:24</p> <p>17 confusion, the patient did not indicate any abnormal smells or 16:55:30</p> <p>18 tastes; is that right? 16:55:35</p> <p>19 A. That's what it says. 16:55:36</p> <p>20 Q. So where did you get evidence to the contrary to put 16:55:38</p> <p>21 in your report? 16:55:41</p> <p>22 A. I do not recollect. I would have to go back and 16:55:42</p> <p>23 look at this stuff again. As you said, this particular 16:55:45</p> <p>24 individual has fairly voluminous medical records. 16:55:50</p> <p>25 Q. Did this lady have any medical — any laboratory 16:55:53</p>	<p>1 accident? 16:58:29</p> <p>2 A. I would have to relook at the data and reconsider 16:58:29</p> <p>3 the opinion. 16:58:33</p> <p>4 Q. Okay. I don't want to — maybe it's a problem that 16:58:35</p> <p>5 doctors sometimes have, but in the last sentence you refer to 16:58:39</p> <p>6 "his" current medical problems to? 16:58:44</p> <p>7 A. As opposed to "he." 16:58:46</p> <p>8 Q. As opposed to "her"? 16:58:47</p> <p>9 A. Yeah. 16:58:49</p> <p>10 Q. You did it too? 16:58:50</p> <p>11 A. Well, he and I have "his," but yeah, I'm not sure 16:58:51</p> <p>12 where this came from. In fact, that's where I looked at it 16:58:56</p> <p>13 and you asked me about — 16:59:00</p> <p>14 Q. Let's put her away. Let's look at Allan Miller. Do 16:59:04</p> <p>15 you have time to do that? 16:59:04</p> <p>16 A. No, we really don't. We're at 5:00 recall now. My 16:59:09</p> <p>17 ride's here. We better talk about what our plans are from 16:59:12</p> <p>18 here. 16:59:17</p> <p>19 MR. TUCKER: Stephanie, have you made an effort to 16:59:24</p> <p>20 keep track of our deposition time as opposed to 16:59:26</p> <p>21 various other times like cellphones breaks and 16:59:29</p> <p>22 conference calls and bathroom breaks and stuff? 16:59:29</p> <p>23 THE COURT REPORTER: Yes. 16:59:29</p> <p>24 MR. TUCKER: What is our total time for yesterday 16:59:33</p> <p>25 and today? 16:59:35</p>
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<p>1 findings at the time she was at the hospital that would 16:56:00</p> <p>2 support a diagnosis of exposure to arsine? 16:56:04</p> <p>3 A. She had — at the WorkMed she had the urine dipstick 16:56:08</p> <p>4 that evening. The next day when she goes to Saint Francis, 16:56:18</p> <p>5 she does not. But they don't measure plasma free hemoglobin, 16:56:25</p> <p>6 so we don't know about that. But other than that, no, sir. 16:56:29</p> <p>7 Q. And do we have any indication that she had the triad 16:56:34</p> <p>8 when she reported to the hospital? 16:56:46</p> <p>9 A. Again, I don't recollect that she had the complete 16:56:48</p> <p>10 Triad. I think there was nausea in this case, but — 16:56:54</p> <p>11 Q. In fact, if you turn to Page 2 of Dr. Hastings' 16:56:59</p> <p>12 letter, the one, two — fourth paragraph, this letter states 16:57:03</p> <p>13 "The patient does report that on the day of her exposure to 16:57:15</p> <p>14 the arsine gas of July 11, 2001, that she did have a mild 16:57:18</p> <p>15 headache." 16:57:22</p> <p>16 A. Yes, sir. 16:57:23</p> <p>17 Q. Does she make any other complaint at that time 16:57:23</p> <p>18 reported here in this letter? 16:57:29</p> <p>19 A. No, sir. 16:57:33</p> <p>20 Q. And none of the other findings; is that right? No 16:57:34</p> <p>21 nausea? No vomiting? 16:57:57</p> <p>22 A. Not in Dr. Hastings', no. 16:57:58</p> <p>23 Q. So with all of that negative medical information or 16:58:02</p> <p>24 lack of information, do you still believe that Ms. Haggard was 16:58:08</p> <p>25 exposed to a significant amount of arsine at the time of the 16:58:26</p>	<p>1 THE COURT REPORTER: Including the time for 16:59:35</p> <p>2 reviewing the records, we're at approximately — 17:03:36</p> <p>3 roughly, 10 hours. 17:03:43</p> <p>4 (At 5:04 p.m., the deposition was adjourned for</p> <p>5 the day and will reconvene at a later date.)</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>

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INGRAM v. AIR PRODUCTS

SHAYNE GAD

July 12, 2005

<p style="text-align: right;">Page 361</p> <p>1 STATE OF NORTH CAROLINA    C E R T I F I C A T E  2 COUNTY OF GUILFORD  3  4  5 I, STEPHANIE FISCHER, Shorthand Reporter and Notary  6 Public, do hereby certify that SHAYNE C. GAD, Ph.D., was duly  7 sworn by me prior to the taking of the Deposition; that said  8 Deposition was taken and transcribed under my supervision; and  9 that the foregoing pages are a true and accurate transcription  10 of the testimony of the said deponent.  11 I further certify that review and signing of the  12 transcript by the witness was not waived.  13 I further certify that the persons were present as  14 stated.  15 I further certify that I am not related to, of  16 counsel for, or in the employment of any of the parties to  17 this action.  18  19  20 Stephanie Fischer  Shorthand Reporter  Notary Public  21  22  23 Commission Number: 20023010106  Expires: November 3, 2007  24  25</p>	

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